[*Curtailment of Wildcatting Plan Launched, Read Page 19*]

Industry Facing Compulsory Regulation Of Production in Texas

By Paul Wagner
N. P. N. STAFF WRITER

HOUSTON, April 13

OIL industry history will be made in Texas, within a few days, in the general movement towards regulation of crude oil production to within the bounds of market demand.

Whatever details of the final order of the state railroad commission may be, the fact will remain that, for the first time, direct and compulsory steps have been taken by a state agency to curb production.

This is in the Hendricks field, in Winkler county, where output now far exceeds facilities for bringing this oil to markets.

Oklahoma and California curtailments were based on voluntary actions of operators, who were backed up and their agreements sanctioned by state agencies. In Texas operators have counseled with the commission in attempting to reach a workable system of prorating, but the responsibility for compulsory orders rests with the commission itself.

Agreement is virtually unanimous that the commission's police powers to prevent waste of natural resources give it ample machinery to enforce equitable prorating. What constitutes equitable prorating may however form a basis of contest.

Magnolia Petroleum Co., and Cranfill and Reynolds, producers in the Hendricks field, stand for full recognition of what they believe to be contract rights. Legal representatives of other companies take the position that the state's right to regulate may not be contracted away. Therefore, they contend contracts cannot prevent exercise by the state of its statutory powers.

Also they contend the allowing of production above prorata quantities, for the purpose of fulfilling contracts, would bring about inequalities of exploitation that would invalidate the commission orders making such exceptions.

Thus the situation stood after the latest hearing before the railroad commission at Austin, April 13, on the question of how details of prorating Winkler production shall be applied.

The commission had called operators to Austin to discuss a proposed order, to be effective May 1, prorating crude on a 40-acre unit plan of production. That plan had contemplated the commission acting "in its discretion" in making exceptions because of crude oil sales contracts, the filling of which would make some operators produce at more than their pro rata share.

Holders of contracts insist that terms of these agreements must be met. The proposed order of the commission discussed at the April 13th meeting provides that in case an operator were allowed to produce in excess of his pro rata amount to fulfill contract obligations, then the adjoining property owner would be allowed to recover similar quantities of crude for storage.

It was brought out that this would place a storage burden on operators prohibited from marketing the full amount of their production, who would be bringing their oil out of the ground only because an adjacent owner had a contract.

The point was made by several attorneys that this would be inequitable, in addition to setting up an endless chain of exceptions that would defeat true proration because of the common source of the oil in an extremely porous horizon.

Various attorneys referred to rulings of the Supreme Court of the United States, which they said would invalidate any order made by the commission on such a basis. They felt, however, that the commission's statutory powers were ample to put proration in effect under some plan of "more equitable character."

Tom E. Cranfill of Dallas, president of Cranfill & Reynolds, Inc., who had contracted to sell Magnolia Petroleum Co. 3,000,000 barrels of crude for storage, suggested prorating on a potential production basis. This would call for the cutting back of exploitation to conform with whatever percentage flow may be found satisfactory.

Another prorating plan discussed was on a back-pressure basis, but that would have to be worked out through a zoning arrangement because of the obvious engineering obstacles brought about by the lowering of pressures in the older parts of the field.

WHEN the commission took under advisement its further action with regard to a compulsory rule putting prorating measures into effect no indication was given of its definite plans. Oil men present professed to believe that changes would be made in the method to be followed and that something would be worked out to put all operators on a basis of equality, whether they had contracts or not.

With exception of Magnolia Petroleum Co., all major operators were favorable to prorating on the basis of 40-acre units. The Magnolia announced it did not agree to such a plan unless present contracts were excepted from its terms. Mr. Cranfill took a similar position. It was in this discussion that other companies argued exceptions would work to the end of making the commission's rule invalid.

Mr. Cranfill reiterated, at this meeting his willingness to enter any prorating plan decided on after his commitments to the Magnolia have been fulfilled, even though it might work to the disadvantage of production from small tracts he operates. Then he proposed the potential production yardstick, which is similar to that first used in the Yates field of Pecos county. The Yates yardstick was changed to a proved acreage basis of determining percentages of market outlet, after the potential production

measure had been employed about two months.

D. C. Proctor, Fort Worth, attorney for Gulf Production Co., called attention at the April 13 conference to the failure of the proposed Winkler order, as written, to say whether the commission will recognize or ignore present contracts. He also described the order as compulsory and unique, going farther than steps taken in either Oklahoma or California, adding that "the commission acts upon its own responsibility."

Mr. Proctor was not objecting to prorating steps, with which the Gulf has been in sympathy. He was calling attention to provisions of the order that might prove complicating.

C. C. Herndon, Tulsa, vice president of Skelly Oil Co., and Judge D. A. Richardson, Oklahoma City, attorney for Marland Production Co., indorsed proration unequivocally; U. De B. Daly, St. Louis, representing Roxana Petroleum Corp., and Shell Pipeline Corp., favored absolute proration without a single exception, regardless of contracts or investments.

In Mr. Proctor's remarks he referred to 105 Winkler wells producing 201,000 barrels daily March 26, compared with 133 wells making 183,000 barrels April 10. In the period mentioned, he said, the number of wells in the field making more than 30 per cent water had increased from 61 to 73.

"Nature seems to be acting for us," he continued, "since we have delayed so long in acting for ourselves."

Testimony of an engineering character was taken with regard to field conditions. The commission heard Carroll H. Wegemann, chief geologist, Pan American group companies; A. W. Peake, president, Dixie Oil Co., Inc., Shreveport; I. G. Harmon, vice president, Marland Production Co., Ponca City; E. G. Allen, general superintendent central division, Roxana Petroleum Corp., Dallas; and John R. Suman, director and general production executive of Humble Oil & Refining Co., Houston. All these men reached their present positions through engineering and geological service prior to assuming executive reins.

Their statements had to do almost entirely with outlining underground conditions affecting recoveries of oil in relation to water encroachments and dissipation of gas pressures. Mr. Allen's description of the Winkler accumulation as a tremendous body of oil floating on a sea of water was given to indicate that, if the field were produced under proper control, the recovery should be almost 100 per cent; whereas unrestrained operations would result in water "coning up" around wells and trapping-off oil that never would be recovered.

Messrs. Allen, Wegemann, Suman and Harmon gave similar testimony with regard to dissipation of pressure bringing about what they called "underground waste," through non-recovery of trapped oil. All were agreed that a proper back-pressure held on the wells would keep down inroads of water and increase ultimate recoveries. An arbitrary back-pressure on the field would not serve operating needs, it was agreed, because dissipation of pressure in older parts of the area had brought about conditions lacking uniformity.

Objections were made by these men to a provision in the proposed prorating order which would have prevented use of the gas lift in the Winkler field.

Experience had shown, it was brought out in testimony, that use of the gas lift creates a back pressure which retards water encroachment in fields where oil is backed by a hydrostatic head; also, the system was described as the economical method of recovering oil from wells that had ceased to flow or which had dropped to low daily average yields.

Cumulative Production Report on Hendricks Field

Company — Lease	Acres	Sec.	Block	Wells	March Prod. (Production	Total Prod. To Apr. 1 Figures	Company Totals are in	Prod. 1 Per Wel Barrels)
Atlantic Oil Producing Co.								
Hendricks-A	80	34	B-5	6	182,324	480,263		80,044
Hendricks-B	80	44	26	1	9,667	29,132		29,132
Hendricks-D	80	29	B-5	3	98,014	305,913		101,971
Hendricks-E	80	41	B-5	1	57,194	291,732	1,107,040	291,732
Atlantic & Collett								
Hendricks-F	160	40	26	1	210,431	210,431	210,431	210,431
Cranfill & Reynolds								
Hendricks-A	20	28	B-5	2	89,130	899,305		449,652
Hendricks-B	10	35	B-5	1	4,819	16,064		16,064
Hendricks-C	20	33	26	1	359,893	359,893	1,275,262	359,893
Gulf Production Co.								
Hendricks	160	34	B-5	7	444,566	1,300,000		185,714
Hendricks	160	45	26	1	2,730	97,000	1,397,000	97,000
Humble Oil & Refining Co.								
Hendricks-A	240	34	B-5	4	579,164	975,328		243,832
Hendricks-B	80	29	B-5	4	111,616	489,934	1,465,262	122,483
Independent Oil & Gas Co.								
Hendricks-A	80	34	B-5	7	139,308	564,805		80,686
Howe-B	80	44	26	1	9,322	42,670		42,670
McCabe-Cowden	640	36	B-5	1	288	288		288
Hendricks	120	42	B-5	1	633	79,319		79,319
Vardeman-B	80	41	B-5	3	59,144	299,180	986,262	99,727
Landreth & Roxana								
Grisham-Hunter	80	45	26	2	180,127	762,183		381,091
Hendricks-A	160	29	B-5	3	181,695	506,565	1,268,748	168,855
Magnolia Petroleum Co.								
Hendricks	80	29	B-5	6	105,742	388,202	388,202	64,700
Murchison & Cranfill Bros.								
Hendricks-A	40	35	B-5	2	4,279	65,191		32,595
Hendricks-B	10	35	B-5	2	23,615	74,735		37,368
Hendricks-C	40	35	B-5	1	3,220	56,806	196,732	56,806
Pure Oil Co.								
Hendricks-A	160	41	B-5	3	157,399	339,853		113,284
Hendricks-B	160	34	B-5	3	49,073	67,618	407,471	22,539
Republic Production Co.								
Hendricks-A	80	45	26	2	281,608	726,423		
Hendricks-B	80	41	B-5				726,423	242,141
Roxana Petroleum Corp.								
Hendricks-A	80	45	26	2	365,814	510,103		255,052
Hendricks-B	80	29	B-5	3	166,218	266,094		88,698
Hendricks-C	80	29	B-5	6	396,759	878,142		146,350
Hendricks-D	80	41	B-5	2	132,816	319,171	1,973,510	159,585
Southern Crude Oil Purchasing Co.								
T-67 Hendricks-1-A	50	42	B-5	1	6,004	127,055		127,055
T-67 Hendricks-3-A	80	4	B-12	1		316		316
T-67 Hendricks-1-B	80	44	B-5	1	17,210	48,680		48,680
T-67 Hendricks-3-B	80	33	26	1	84,825	100,642		100,642
T-67 Hendricks-C	80	33	B-5	5	39,625	404,100		80,820
T-67 Hendricks-F	80	33	B-5	3	84,200	284,214		94,740
T-68 Hendricks-3-A	80	35	B-5	1		356		356
T-88 Hendricks-A	80	44	26	2	23,551	219,962		109,981
T-88 Hendricks-B	80	4	B-12	2	183,654	1,091,481		545,740
T-88 Hendricks-C	140	28	B-5	6	73,668	238,345		39,724
T-88 Hendricks-H	110	28	B-5	1	41,561	50,178		50,178
T-88 Hendricks-I	80	30	B-5	1	42,878	50,657		50,657
T-89 Hendricks-1-A	50	35	B-5	1		1,947	2,617,933	1,947
Texon Oil & Land Co.								
Hendricks-A	80	41	B-5	1	59,761	211,479		211,479
Hendricks-B	80	45	B-5	2	183,341	223,493	434,972	111,747
Turman & Maxwell								
Hendricks	80	29	B-5	6	178,430	343,472	343,472	57,245
Totals						14,798,720	14,798,720	

Production shown for Humble's "A" lease includes 90,571 bbls. made by wells Nos. 6 and 10 in Sec. 41, block B-5, in March.

Curtailment Meeting Called

(By Telegraph)

TULSA, April 17.—A general meeting of operators of Oklahoma and Kansas has been called by Chairman Reeser of the special advisory committee of the Mid-Continent Oil and Gas Assoc., Oklahoma-Kansas division. The meeting will be held in Tulsa, April 21.

The plan recently drawn by the advisory committee on wildcat restriction and approved by the executive committee of the association will be submitted to the operators without regard to association affiliation.

Wildcatting Curtailment Plan Launched In Mid-Continent District

By Lawrence E. Smith
N. P. N. STAFF WRITER

TULSA, April 14

WHILE some opposition was expressed to the wildcatting curtailment plan submitted by a special committee, the executive committee of the Oklahoma-Kansas division, Mid-Continent Oil & Gas Association approved, April 11, the report and its recommendations.

Such approval carries with it the stipulation that the Texas and Louisiana-Arkansas divisions of the association must outline similar restrictive plans, or those of the Oklahoma-Kansas division will be declared void.

Four members of the executive committee, representing that many companies, inclined to a local option view on restriction of new pools and voted against the adoption of the report. They believed that the Seminole plan of working out separate agreements among the lessees around any well that opens new territory is preferable to application of restrictions on such a wholesale scale as was proposed.

The committee that made the report, consists of E. B. Reeser, president of the Barnsdall Corp. as chairman; Dana H. Kelsey, vice president and general manager of the Prairie Oil & Gas Co.; E. H. Moore, president of the Independent Oil & Gas Co.; Joe T. King, president of the Kingwood Oil Co. and John M. Lovejoy, vice president and general manager of the Amerada Petroleum Corp.

Its recommendations were drastic. All operating companies were urged to pledge themselves to buy no acreage in wildcat blocks, nor to contribute "dry hole money" to wildcats. The committee and an umpire to be named were to approve all "necessary" wildcats, which approval would be given only where drilling was necessary to carry out lease contracts and then only on condition that some form of acreage pooling or unit operation had been perfected.

The status of the restrictive plan, therefore, is that it has been approved by the executive committee of the association, subject to similar action by the two other divisions of the association.

President W. N. Davis, of the Mid-Continent Oil & Gas Association—each division of the main association also has a president—was asked by resolution to call a meeting of the main executive committee. He deferred action until the outcome could be learned of the meeting at Austin, Tex., on April 13. That meeting was held to consider proration of Winkler county production.

Mr. Davis is expected to call the meeting requested, probably for Fort Worth, within a few days. While the Austin meeting failed to develop much that was definite, it is believed that the Mid-Continent association move, being aimed at wildcat activity, can proceed independently of the Winkler county efforts at restriction.

The Louisiana-Arkansas division of the association informed Secretary Harry H. Smith, of the main association, late in the week it was ready to hold a meeting.

The restriction of wildcat activity in Oklahoma and Kansas thus far is solely in the form of recommendations by the executive committee of the association—except for the Seminole district, where a considerable area is covered by working agreement. Thus it is probable that, if the main association goes ahead and puts its approval on what has been started, a general meeting of operators in each division will be called to consider the plans outlined. That, in the view of many, would be necessary to seek the full measure of approval required to make the plan 100 per cent effective, as the association has only advisory powers and the restriction is to be a voluntary one.

The attention which has been attracted by the committee which proposed the plan* and the willingness of wildcatters to cooperate in holding down drilling was indicated by Walter P. Bauer, of Wetumka, Okla., who applied to the special committee the day after the executive committee had approved the report, for permission to drill a well in Hughes county.

Mr. Bauer was the first to make formal application, although several others inquired as to what was necessary to get permission. Mr. Bauer had spent about $10,000, he said, in getting material on the ground and rig up, in the NW SW of 1-8N-10E. All the acreage around the well except an 80-acre offset lease to the north of his location and an 80-acre lease a half mile north has been under lease for four to nine years and seven leases will expire in the next 14 months unless they are drilled. Prior to the adoption of the report by the executive committee of the association 13 of the adjoining lessees had gone into a plan to contribute to the drilling of Mr. Bauer's test.

In the event this well gets production, Mr. Bauer said he would abide by the present regulations to restrict production or by any others in force at that time. This is to be a Wilcox sand test, unless production is found at higher levels. The nearest production is about seven miles to the northwest of the Bauer wildcat.

Mr. Bauer was advised to go ahead with his test.

*National Petroleum News, page 17, April 11.

Cotton Valley Operators Agree on Drilling

(By Telegraph)

HOUSTON, Tex., April 16.—Cotton Valley, La., operators seek to conserve gas pressure and prevent over drilling of the newly discovered 4700-foot pay by agreement to put down only one deep well to each 40 acres.

This procedure was agreed on at a conference with William F. Chisholm, supervisor of the minerals division of the state conservation commission. The regulation was proposed by operators.

A recently completed deep pay discovery well of the Ohio Oil Co. in 15-21-10 made 3000 barrels initial flow from Trinity series beds and afterwards increased its daily production to 6000 barrels of 49.6 gravity oil. It is to prevent overdrilling at this depth that present steps are being taken.

A second big well in the Rainbow City area of Union County, Ark., is the Magna Production Co.'s No. 1 Dunas in 11-17-14 northeast of the Pure Oil Co.'s recent 2000-barrel completion in Sec. 10. The Magna well is estimated good for 3000 to 5000 barrels daily at 3240 feet total depth, or 88 feet lower than the Pure's completion.

Hold Petroleum Exposition October 20 to 29

(By Telegraph)

TULSA, April 16.—Directors of the International Petroleum Exposition April 14 voted to hold an exposition this fall in Tulsa and on April 16 date was set for Oct. 20 to 29 inclusive.

Directors re-elected William G. Skelly, president of the Skelly Oil Co., president of the exposition. Mr. Skelly held this position in 1927, and gave liberally of his time to the preparations for that exposition, which was highly successful.

J. Burr Gibbons was elected again to manage the exposition. He will begin June 1 to spend all his time preparing for the show, although certain preliminary business will be handled by him before that date.

The directors re-elected Frank J. Hinderliter, of the Hinderliter Tool Co., and Alf G. Heggem, of The Oil Well Improvements Co., vice presidents, and William Holden, secretary.

One new officer was chosen, A. W. Leonard, of the Devonian Oil Co., to be treasurer, succeeding the late James J. McGraw. Six new directors were elected, these being Joseph McGraw, son of the late James J.; Harry H. Rogers, new president of the Exchange National Bank; J. Burr Gibbons; S. W. Campbell, of the Tulsa Storage and Transfer Co.; O. T. Dawson, of the National Supply Co.; and J. H. Brooks, of the Republic Supply Co.

A committee was appointed to begin planning the exhibits. This consists of R. M. Young, president of the Carter Oil Co., Waite Phillips, chairman of the board of the Independent Oil and Gas Co., A. W. Leonard, vice president of the Devonian Oil Co., William G. Skelly and Clyde Alexander, vice president of The Phillips Petroleum Co.

Publish West Virginia Survey

MORGANTOWN, W. Va., April 14.—"Detailed Report on Hampshire and Hardy Counties" is a new publication by the West Virginia Geological Survey. The report is described by the survey as Hampshire county (164 pages) by John L. Tilton assisted by Paul H. Price; Hardy county by Wm. F. Prouty assisted by R. C. Tucker and Paul H. Price (pp. 165-202); (pp. 366 to 624 by R. C. Tucker); 624 pages, with xxiv of introductory matter, illustrated with 77 half tone plates and 19 figures in text with case of topographic and geologic maps of each county; issued under date of Nov. 15, 1927. The report may be obtained for $3 from the West Virginia Geological Survey, P. O. Box 848, Morgantown, W. Va.

Coming Meetings

Kansas Oil Men's Association, Hotel Lassen, Wichita, Kan., April 26, 27.

Natural Gasoline Department of American Gas Association, Texas Fair Grounds, Dallas, May 7, 8, 9, 10.

National Oil Scouts of America, Amarillo, Tex., May 21, 22.

Natural Gasoline Association of America, Hotel Mayo, Tulsa, May 22, 23, 24.

West Virginia Oil Marketers Association, Kanawha Hotel, Charleston, W. Va., June 14, 15.

New England Jobbers Study Code

HARTFORD, April 16.—The Independent Oil Men of New England have appointed three member jobbers to a committee to study the question of a code of marketing practices for oil companies in their territory.

This committee is to report at the next meeting of the association at Wallaceton Golf Club, Wallaceton, Mass., May 9.

The code of ethics for marketers was the principal topic of discussion at the meeting of the New England jobbers April 11 at Hartford, Conn. Several members said they were in favor of the association concentrating on trying to eliminate a few major evils with which marketers in this territory are confronted, rather than attempting the adoption of a general code.

After luncheon, which was served to nearly 60 jobbers and oil company representatives, J. J. Montgomery of the Allen Advertising Co., Hartford, gave a number of helpful suggestions with regard to effective advertising. He especially stressed the value to members of the association of tying up their own advertising with the national campaign being conducted by the Independent Oil Men of America.

I. O. M. A. Adopts Uniform Colors

(By Telegraph)

CHICAGO, April 16.—Trustees of the Independent Oil Men of America in session in Chicago April 16 recommended a new uniform color scheme of orange and olive green for adoption by the entire membership, for stations. Members in Wisconsin already have adopted it and others in Chicago and its suburbs have followed their example and started painting.

Outlook is Improved As Refiners Meet

CLEVELAND, April 17.—Economic conditions as well as technical problems and marketing phases will be discussed at the spring meeting of the National Petroleum Association at Cambridge Springs, Pa., April 19 and 20.

Indications are for a good attendance, according to Fayette B. Dow, Washington counsel of the association. Improved trade conditions, Mr. Dow says, seem to be giving the refiners the first ray of sunshine in many months.

The meeting will survey the work of all departments of the association in which the members have shown unusual interest and activity the past year. Several papers on technical phases of refinery operation will be read.

The Pennsylvania Grade Crude Oil Association holds its meeting at the Hotel Riverside in Cambridge Springs on April 18, the day before the N.P.A. meeting opens, and a number of its members will doubtless stay over and swell the attendance at the refiners' meeting.

Nebraska Jobbers Meet Two Days at Kearney

CHICAGO, April 13.—If the program of the spring convention of Nebraska Independent Oil Men's association is carried out as published the jobbers assembled at Kearney, Neb., on April 18 and 19 will have an opportunity to hear talks by men who are not often heard at meetings of marketers.

Howard Bennette, managing director of the Western Petroleum Refiners' association has promised to be on hand. Lou Harrington, the new manager of the Independent Oil Men of America, will make his first public appearance for the association at Kearney.

Barney Majewski, vice president of Shaffer Oil & Refining Co., will deliver the address, "Follies of 1927," with which he has "rung the bell" at a few jobbers' meetings this spring already. The moral of his talk is advice to make every resale account net a profit.

Cy McKee, chief chemist of the Nourse Oil Co., Kansas City will discuss "Lubrication Problems" at the N.I.O.M.A. meeting and Cul N. Wright of Scottsbluffs, Neb., has been selected as the banquet speaker.

LOS ANGELES, April 6.—General Petroleum Corp. has placed orders with J. A. Campbell for the installation of Duplex tank controls for the vapor recovery system at its Athens tank farm.

Kerosene Price at Peak for 12 Months Through Heavy Spring Buying

By J. C. Chatfield
N. P. N. STAFF WRITER

TULSA, April 16

SINCE the first of April the price of 41-43 water white kerosene in Group 3 has risen to around 5 cents per gallon.

This is the highest price for that commodity since March, 1927, when the market was brought down by the heavy cuts in the Mid-Continent crude price.

In the 12 months ending April 1, the average tank car price of kerosene in Oklahoma fluctuated only about a half cent per gallon. The July and August minimum was about 4.125 cents, and the October maximum about 4.68 cents per gallon.

Refinery stocks were not reduced to a low point any time during the year and the market witnessed no wide variations such as those which characterized the spring and fall shortages of 1926.

The present advance in kerosene prices is the result of a steady depletion of kerosene stocks in the Mid-Continent, which has been under way since the first of 1928. While the decrease in refinery reserves has been steady since last December, the heaviest reductions have taken place since the latter part of March.

The course of kerosene stocks in this district may be traced almost to date through the weekly reports gathered from a group of representative plants by NATIONAL PETROLEUM NEWS. This group, with a combined plant capacity of 408,600 barrels of crude per day, held in storage 14,655,000 gallons of kerosene Dec. 30, 1927. The latest stock report, April 6, shows the same group held 9,776,000 gallons.

In the first three months of the year the group has reduced its stocks 4,879,000 gallons, or 33.3 per cent.

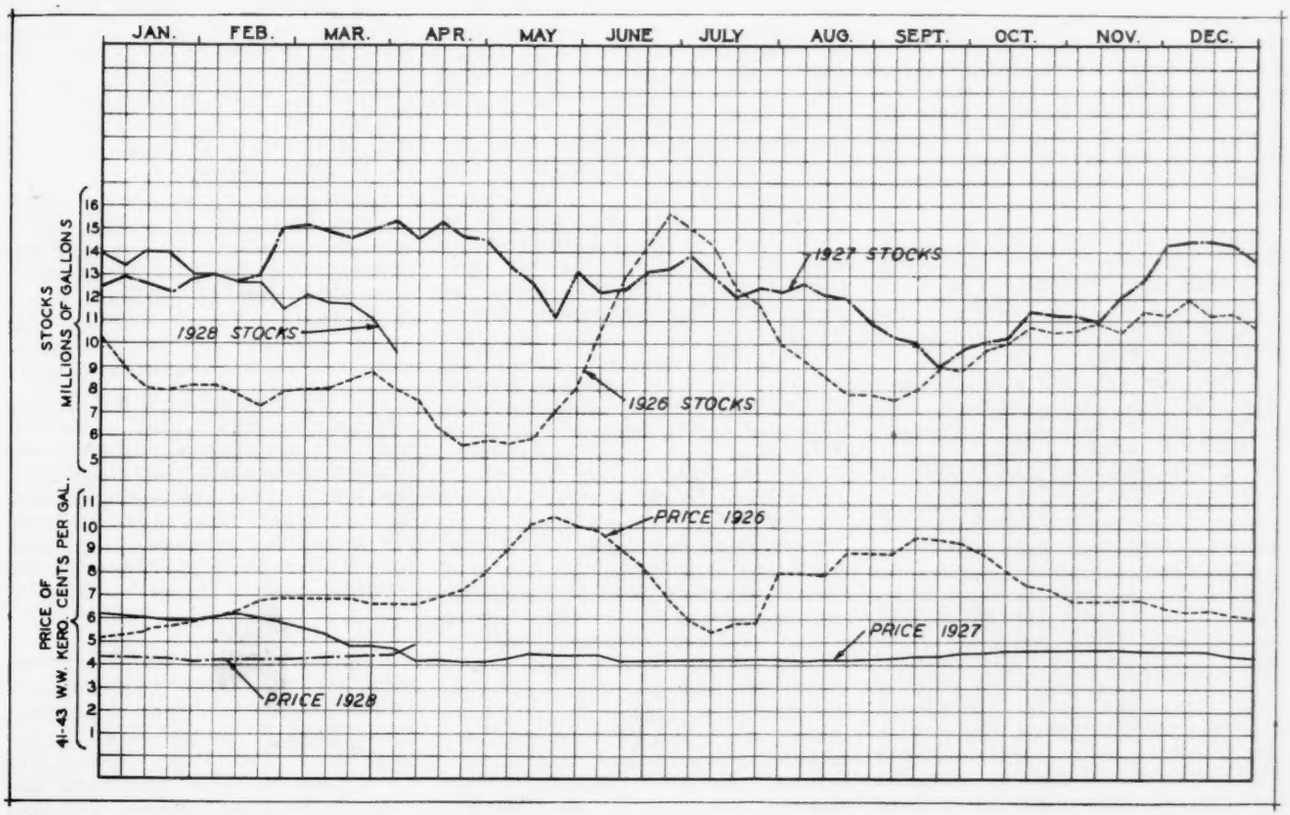
This year the demand for kerosene came earlier than in 1927 and has been much heavier. Last year stocks increased as steadily during the first quarter as they have been reduced in the same period this year. April 15, 1927, stocks touched a peak of 15,330,000 gallons, 6,000,000 gallons greater than at present. From that point on the reduction was steady until May 20, when the spring low point of 11,270,000 gallons was reached.

Although it is two years since the kerosene shortage of 1926, undoubtedly the memory is still fresh in the minds of many jobbers who were forced to pay as high as 10.5 cents per gallon, almost as much as for U. S. Motor gasoline at that time.

In 1926 there was a heavy reduction in kerosene stocks in January and February to a low point of 7,412,000 gallons. In March stocks were built up again to 8,942,000 gallons. Then heavy demand began to deplete stocks week after week until they were down to about 5,500,000 gallons, where they stayed until the middle of May.

By that time the price of kerosene had risen so high that refiners increased production sharply and stocks were pushed up to more than 15,000,000 gallons by the end of June.

An accompanying chart shows the course of kerosene stocks at the plants of refiners reporting to NA-



Stocks of kerosene at 79 Mid-Continent refineries since Jan. 1, 1926 and price of 41-43 water white grade in Group Three

TIONAL PETROLEUM NEWS weekly since Jan. 1, 1926. In the lower part of the chart are shown the open market prices at which 41-43 kerosene sold during the same period. This chart illustrates clearly the effect which kerosene stocks have had on market prices.

The chart indicates that, normally, the lowest point reached by kerosene stocks in the Mid-Continent is in May in the spring and September in the fall, with a summer peak in June or July.

In view of the fact that kerosene business has been brisk all through the latter part of the present winter there is a question in the minds of many refiners and other market observers as to whether history will repeat itself this spring.

It is possible that jobbers have done their kerosene shopping early and have placed orders for, or received enough, kerosene so that the peak of demand may be at hand now instead of being in prospect for May.

Brokers have been looking forward to higher kerosene prices this spring and have bought heavily in advance for April delivery. Many refiners in the field have booked orders to such an extent that it seems possible to buy from brokers today with less difficulty than from refiners.

Under no circumstances does it seem probable that kerosene prices could jump as high as they did in 1926. Crude prices are lower and gasoline prices are lower. Stocks are still 1,500,000 gallons greater than they were at the same time that year.

If, however, the reduction in stocks continues at a rapid pace throughout April, it seems inevitable that kerosene will advance much closer to the price of gasoline than it is today. If, on the other hand, early buying has nearly satisfied the demand, the price of kerosene may be stabilized soon.

Since the refining industry has so greatly improved its fractioning equipment, the production of kerosene is very flexible. That portion of the crude which formerly was considered kerosene contains a great deal of material which can be used to make good gasoline. The result is that refiners can increase their production of kerosene quickly. But they will not do so until the price begins to approximate the price of gasoline.

Since these refinery improvements, kerosene does not drop as low as before, based on crude costs. In 1925 41-43 kerosene at an average price of 4.559 cents per gallon represented only 102.94 per cent of the price of 36 gravity Mid-Continent crude. In 1926 the average price of 7.350 cents per gallon represented 147.0 per cent of crude. Last year the kerosene market averaged only 4.712 cents per gallon in Group 3 but this was still 142.9 per cent of the cost of crude.

W. E. WOOD

One of the founders of the Kingwood Oil Co. who retired April 1. Accompanied by Mrs. Wood he sails April 21 for Europe

Kingwood Official Sells Interest in Company

OKMULGEE, April 16.—W. E. Wood, one of the founders of the Kingwood Oil Co., a producing corporation, retired from active service and part ownership of the company on April 1. With Mrs. Wood he will sail from New York April 21 for a European tour.

Mr. Wood was one of the organizers whose name went into the name of the company, the other being Joe T. King. Mr. Wood was secretary and treasurer and Mr. King president of the company.

L. A. Schumacher, purchasing agent for the Kingwood, succeeded Mr. Wood in the official family. Mr. Wood's stock was purchased by his associates.

Mr. Wood came to Oklahoma in 1903, when he entered the banking business at Medford. In the same year he came to Okmulgee as cashier of the Okmulgee National bank. He became interested in oil in 1907 and in 1914 the Kingwood company was formed. He is at present a director of the American National Bank of Okmulgee and is prominent in the direction of oil and gas associations.

Dunn Heads Purchasers

TULSA, April 14.—Frank H. Dunn, purchasing agent of the H. F. Wilcox Oil and Gas Co. was elected president of the Purchasing Agents Association of Tulsa at the annual business meeting April 10. He succeeds G. A. Thompson, under whom Mr. Dunn served as vice-president last year. Other officers elected were H. E. Harvey, Josey Oil Co., vice-president. O. E. McClatchey, Barnsdall Oil Co., second vice-president, and H. M. Cosgrove secretary-treasurer.

Young Doheny Freed So He Can Testify

WASHINGTON, April 14.—Amazing speed was made in the Harry F. Sinclair trial this week. But for one unusual thing the government would have completed its case within the week of the beginning. On the fifth day of the trial the government tendered Edward F. Doheny, Jr., as a witness to show the frame of mind of Albert B. Fall as shown by the fact that young Doheny delivered to Fall $100,000, not as part of a bribe on the Teapot Dome lease, but merely that he delivered that amount of money to Fall.

To qualify Doheny, Jr., as a witness the government nolle prossed the indictment charging him with delivery of that money after his father had obtained the California reserves contract. So long as the indictment stood against him the government could not require him to give testimony, the object of which can be nothing other than to show that Fall, at the time he obtained money from E. L. Doheny, and Sinclair, was in a mood to take what he could get.

The proposition was so novel that Justice Bailey adjourned court until April 16 so he might consider whether he would allow such testimony, character testimony it might be called, to show that Fall was obtaining money from those who obtained leases.

The extraordinary speed was due to the assumption by Justice Bailey of the right to be the only one to put questions to prospective jurors. He assumed direction of the trial in the old fashion, that of the judge sitting to declare the law to the jury and to advise it as to the value of the evidence adduced.

Lawyers had to hand their questions to Justice Bailey and if he saw fit he would ask them. The lawyers were deprived of everything except the right to challenge jurors peremptorily. The result was that in one day the jury was empanelled with only 55 veniremen examined.

The witnesses repeated the oft told tales of how Fall kept secret the negotiations and even misrepresented to inquirers what he had done about the matter, how he excluded even his own subordinates, and eliminated the competition of oil men and companies desirous to bidding for the leases.

TULSA, April 14.—All carload sales from the Pierce Petroleum Corp. refinery at Sand Springs, Okla. have been placed in charge of J. R. Arrington of the Tulsa office. For several months these sales were handled at the head office of the company in St. Louis.

Gasoline Tax Builds 7000 Miles of Road

GREENSBORO, N. C., April 14.—How revenue from the gasoline tax in North Carolina is spent, was told in a paper presented by R. A. Doughton, commissioner of revenue and father of the present revenue act in that state, at a meeting of the North Carolina Independent Oil Jobbers here recently.

During the last fiscal year $8,120,604.29 were collected as a tax on gasoline, and $5,893,609.78 from auto licenses, or a total of $14,014,214.07. Of this amount, nearly $3,900,000 was spent for the maintenance of roads, leaving available for construction $5,650,278.70, plus the federal appropriation of $1,725,000. The rest of the revenue, which is about $4,500,000, went for collection expenditures, administration and interest.

Since 1921, when the gasoline tax first went into effect, 6500 miles of roads have been built and 800 additional miles graded and bridged.

Iowa Jobber Entertains Sales Personnel

CALMAR, Ia., April 14.—The Tri-Star Oil Co. of Calmar held its seventh annual banquet for employes and dealer customers at the Hotel Calmar here on April 5.

Karl Buck, general manager of the company, presided. The Tri-Star Oil Co. is a member of the Independent Oil Men of America. R. A. Overholser of the association's Chicago office delivered an inspirational talk on the organization's program. Kelly Johnson, vice president of the Pennsylvania Petroleum Co. of Kansas City, spoke on Lubrication, and Hoyt Ogram of Kanotex Refining Co., Arkansas City, Kan., discussed refinery practices.

The closing address was made by Dr. J. F. Conover, head of the Tri-Star organization.

Sunray Buys In Allen Field

(By Telegraph)

TULSA, April 17.—Sunray Oil Co. has purchased for $400,000 cash and $600,000 in oil about 400 acres in leaseholds and 1500 barrels of production from two wells from Ramsey Bros. The properties are north of the Canadian River in the deep sand extension of the Allen field, in Twps. 5-8 and 5-7.

Late Tank Wagon Change

(By Telegraph)

OMAHA, Apr. 17.—On Apr. 16 Standard Oil Co. of Nebraska advanced tank wagon and service station prices of gasoline 1 cent at Omaha, to 16.25 cents and 18.25 cents, including 2 cent state tax.

J. A. VAN WYNEN
Vice president and director of the newly organized Stanco Inc., subsidiary of the Standard Oil Co. (N. J.)

Specialty Marketing Branch Formed

NEW YORK, April 14.—Organization Jan. 1 of Stanco, Inc., to take over the business of the 12-year old Nujol department of the Standard Oil Co. (New Jersey) and the marketing of other specialty products marks another step in that company's new policy of decentralization of operating control. This subsidiary is organized under a Delaware charter and capitalized at $10,000,000.

Stanco Distributors, Inc., has been formed as the marketing outlet in this country for Stanco, Inc. The latter company markets in 91 countries and advertises in 77 lands. It is primarily engaged in selling Nujol, Flit, and Mistol and other petroleum by-products. The president is F. H. Bedford, Jr., who was the organizer and manager of the Nujol Department some 12 years ago. Mr. Bedford was formerly manager of the company's lubricating oil department which was actively supervised for nearly 50 years by his father, F. H. Bedford.

Besides Mr. Bedford, the board of directors of Stanco, Inc. are: C. L. Bowman, and J. A. Van Wynen, vice presidents; J. C. Wolke, E. E. A. Stone, F. W. Abrams, C. C. Ramsdell, A. A. Lacazette, E. F. Johnson and S. C. Hope. All of the directors have been with the Standard Oil Co. (New Jersey) anywhere from 10 to 40 years.

WASHINGTON, April 16.—New publications by the Bureau on petroleum includes Bulletin 289 on petroleum refinery statistics: 1926 by G. R. Hopkins. Price is 20 cents, orders and remittances to be sent to the superintendent of documents, government printing office, Washington.

Supply Men Will Entertain Gasoline Manufacturers

TULSA, April 16.—The Natural Gasoline Association plans to eliminate the annual banquet from the program of its convention to be held in Tulsa May 22 and 23 this year. In its place a smoker and entertainment is being planned by the Natural Gasoline Supply Men's Association which is being organized. The supply men's group provided a dinner and entertainment last year.

F. L. Chase of Dallas, vice president of the Lone Star Gas Co., will make the opening address this year and occupy the chair at the morning session until President H. A. Trower makes his annual report.

W. A. Melton of the Shaffer Oil & Refining Co. is to lead a discussion on the theory and practice of automatic control after a paper on that subject is read by T. G. Laney, research engineer for the Fisher Governor Co.

At the afternoon session on May 22, E. L. Peck, former president of the association, will be chairman. After the paper on rectification by L. S. Gregory, consulting engineer, a discussion will be led by G. G. Oberfell, director of research for the Phillips Petroleum Co. George L. Ratcliffe of the General Petroleum Corp., Los Angeles, and a vice president of the association, will be chairman at the evening session that day. The evening session was arranged to leave May 24 open for a trip to the Seminole field.

On May 23 Emby Kaye of the Skelly Oil Co. will act as chairman of the morning meeting. S. C. Carney of the Roxana Petroleum Corp., will lead a discussion of the volatility of natural gasoline after a paper on that subject is presented by Mr. Oberfell.

G. M. Davidson, general superintendent of gasoline plants for the Empire Oil & Refining Co., will lead the discussion of the gas lift and repressuring as they affect the natural gasoline industry. A paper on the same subject will be read by H. B. Bernard, vice president of the Sinclair Refining Co.

For the final business session Dr. E. R. Lederer, vice president of the association, will be chairman. George P. Bunn will lead the discussion on the importance of gas and gasoline analysis. D. E. Buchanan of the Chestnut & Smith Corp., will lead a discussion of the paper on methods of marketing. Mr. Buchanan is chairman of an A.P.I. committee working on the problem of broadening markets for petroleum products.

The Selection of Power Equipment For Oil Well Pumping Service

By Lester C. Uren, Professor of Petroleum Engineering, University of California

TWO previous articles in this series have described recent improvements in equipment employed in applying power to the operation of oil well plunger pumps when an individual power plant is provided at each well.

This and the succeeding article will present descriptions of the various types of prime movers and transmission systems that find use in the development of power for this purpose, and will discuss their relative advantages.

The present article will be devoted to a review of the advantages and disadvantages of electric power and its application in oil-well pumping service.

In earlier years, the producer depended entirely upon the steam engine for the development of power used in pumping service, but the inefficiency and high cost of steam power has led, during more recent years, to the widespread use of internal combustion engines and electric motors for this purpose.

The last few years have witnessed a considerable improvement in engines and motors designed for production service, and a definite trend toward the use of the electric motor in preference to other types of power equipment.

Where electric power may be purchased from utility companies at reasonable rates, there is probably no more economical and satisfactory form of power for pumping service. Where electricity is not available from outside sources, or where it is unusually costly, the oil producer is confronted with the alternative of either developing his own electric power, or of making use of steam or internal combustion engines. Of the latter, there are two general types: those utilizing natural gas as fuel, and those making use of crude petroleum or its distillates.

In the previous article of this series, the character of service required of the power plant used in operating mechanically pumped oil wells was discussed in some detail, but it would seem to be appropriate at this point to again remind the reader of the dual requirement imposed on the motor or engine in meeting the needs of a slow-speed, low-torque demand for pumping, with occasional high-speed, high-torque demand for well cleaning and in pulling rods and tubing during repair operations.

Article 3, Part 1—Electric Power

Various types of prime movers and transmission systems for the operation of oil well plunger pumps are described in this article of the latest Uren series. Previous articles were published March 7 and 28.

Article 3 on electric power is divided into two parts; Part 1 published herewith and Part 2, to be in a forthcoming issue.

Article 4 in this series will deal with internal combustion engines.

Efficiency must sometimes be sacrificed in meeting this two-fold demand. A power plant designed for efficient operation at one speed and a certain power output, must of necessity function less efficiently when called upon to deliver power at a greater or lesser rate and at a radically different speed.

Flexibility, ruggedness, simplicity of control and assured continuity of service may outweigh mechanical efficiency in selecting a type of prime mover for this character of service.

Historical Development of Electric Power in Oil Production Service

IN SO far as can be learned from the early literature of this subject, electric power was first used in oil-well pumping service in the Baku field of Russia in 1900. Two years later the first application was made in one of the Roumanian fields.

Electricity was first applied in oil-field operations in this country by the South Penn. Oil Co. in the Appalachian field, in West Virginia, about 1905. Early applications of electric power were also made in the San Joaquin Valley fields of California, beginning in 1910.

During the war period, due to the high cost of copper and scarcity of electrical equipment, development of this form of power in the oil fields was greatly restricted, but the post-war period has been exceedingly active in this direction, especially during the last six years. During this time, electric power has found extensive application in many of the important oil fields of California and the Mid-Continent and Rocky Mountain regions.

Though a few large electric power development projects have been consummated by individual oil companies, the American oil fields have been served primarily by utility companies, and recent development of electric power has been largely in the hands of utility concerns which have in some instances been organized primarily to meet oil field power requirements.

Abroad, electrification of oil fields has been proceeding even more rapidly than in this country particularly in the European and Asiatic fields, but in foreign fields power development has, for the most part, been fostered directly by the oil-producing companies.

Types of Electric Motors Used in Operating Oil Wells

IN THE early efforts at electrification of oil-well pumping rigs, an effort was made to adapt the then-existing motors, designed for other purposes, to the operation of the equipment that had been customarily provided for steam or gas-engine driven rigs. Naturally, the results were not always satisfactory. Many types of motors have been used, including the constant speed, two speed, single variable speed and variable two-speed varieties. The relatively high speed of the electric motor, presented a difficult problem in speed reduction which was at first met by a "back-gear" on the motor drive shaft which, however, was noisy and inefficient and soon gave way to the widely used belted countershaft.

As the manufacturers of electrical equipment began to appreciate the possibilities of the oil-field market, they assigned their engineers to the task of developing a type of motor that would be particularly adapted to the character of service required, and changes were also introduced in the power transmission mechanism to better adapt this form of power to the requirements imposed.[1]

Of the several different types of motors available for well pumping service, none has proven so satisfactory for use in connection with the usual belt-driven, band-wheel type of power transmission, as the "oil-well type" of slip-ring induction motor, designed for two power ratings at two different synchronous speeds, both of which are adjustable by resistor control.

Such motors are reversible, and

1. Special features of the power transmission equipment appropriate for use in connection with electric motors, were described in the previous article of this series; see NATIONAL PETROLEUM NEWS, issue of March 21, 1928, page 63.

the two-speed feature applies in reverse as well as in forward motion. A double-throw, pole-changing switch permits of quickly changing from one speed and power rating to the other, as the work to be done may require.

Fig. 1 illustrates a typical motor of this type, and Fig. 2 shows the control mechanism.

The motor illustrated may be purchased in several different power ratings, the 35/15 and 50/20 h.p. sizes being commonly used while motors with ratings of 25/10 h.p. and 65/25 h.p. are also available. The latter rating indicates that with the stator poles grouped in one of the two alternative combinations, the motor will deliver 65 h.p., while the other combination will convert the same motor into a 25 h.p. unit.

The speeds will, however, necessarily change also, a typical motor of this style having at full load, a speed of 1200 r.p.m. at its high power rating, and 600 r.p.m. at low rating. The low speed is used for operation of the pump, while the high speed is used for pulling rods and tubing, bailing, swabbing and other miscellaneous operations necessary from time to time in keeping the well "on production."

Such motors may be operated continuously at 125 per cent of its power rating for two hours, without overheating, and at high speed they are capable of delivering three or four times their full-load torque for a period of three minutes.

The control mechanism illustrated in Fig. 2, is equipped with secondary resistor grids and a drum controller giving 10 points of speed control, both forward and reverse, controlled by a telegraph cord from the "headache" post to the rig. An oil-immersed contactor panel with push-button control, provides for pole changing and circuit breaking.

The main circuit switch with protecting fuses, is placed within a metal case the switch being operated by external lever control. The circuit-breaker should be designed to automatically disconnect the power when for any reason, the voltage becomes too low, or when the motor is dangerously overloaded.

The trip coils designed for the latter purpose are double-wound, to provide protection at both speeds, these coils being electrically connected with the pole-changing switch in such a way that they will always be connected with the circuit breaker and will function at an overload corresponding to the motor rating in use.[2]

Although the control gear is designed for wide variation in motor speed, and the motor is capable of running continually at any speed within its range, it is desirable to arrange the speed reduction gear between the motor and the beam, so that only a small portion of the secondary resistance remains permanently in circuit when the machine is in pumping service.

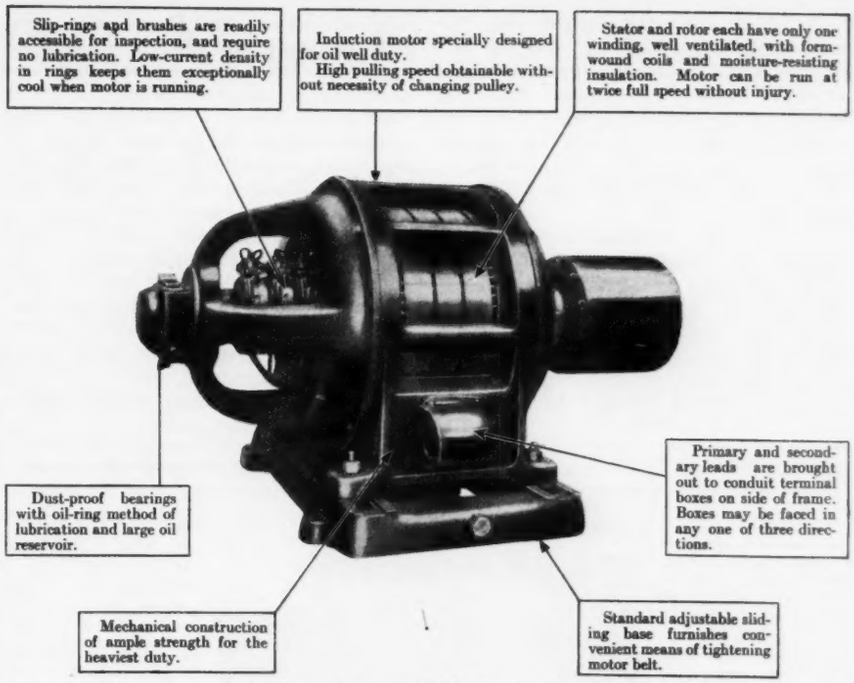

Slip-rings and brushes are readily accessible for inspection, and require no lubrication. Low-current density in rings keeps them exceptionally cool when motor is running.
Induction motor specially designed for oil well duty.
High pulling speed obtainable without necessity of changing pulley.
Stator and rotor each have only one winding, well ventilated, with form-wound coils and moisture-resisting insulation. Motor can be run at twice full speed without injury.
Primary and secondary leads are brought out to conduit terminal boxes on side of frame. Boxes may be faced in any one of three directions.
Dust-proof bearings with oil-ring method of lubrication and large oil reservoir.
Mechanical construction of ample strength for the heaviest duty.
Standard adjustable sliding base furnishes convenient means of tightening motor belt.

Fig. 1—Modern type of double-rated, two-variable speed oil well motor. (Courtesy, General Electric Co.)

If a large portion of the resistance is left in circuit, it reduces the efficiency and economy of operation.

All parts of the motor and control equipment that might be productive of electric sparks, are preferably enclosed in a metal housing, for protection against fires and explosion which may result from contact with natural gas or gasoline vapors from the well.[3] The use of housing on the motor is doubly important in some fields because of the corrosive action of the well gases on the motor windings and polished metallic contacts.

In designing gas-protective housing for use on electric motors, special consideration must be given to the problem of heat conduction.

While the double-rated, variable speed motor is eminently satisfactory for the purpose of operating a pumping well, in so far as utility and general adaptability to the work is concerned, it has an unusually low power factor, (about 54 per cent), when operating at its lower speed and power rating in normal pumping operations. Since the motor is used at this speed and rating most of the time, this means an over-all low efficiency from the power-factor standpoint.[4] Furthermore, the control equipment for the double-rated, variable speed motor is complex and expensive.

The double-rated constant speed, "squirrel cage" motor, has a higher power factor (about 85 per cent), and the control equipment is less expensive. This motor is satisfactory for pumping operations when operated in connection with proper speed-reduction mechanism, but lacks the flexibility of the variable-speed motor in pulling rods and tubing, and in bailing or swabbing, unless appropriate speed control is provided by the transmission mechanism.

Some of the double-reduction gear units described in the preceding article of this series,[1] provide a means of speed regulation by changing gear ratios, which can be quickly accomplished, and by the use of a two-speed, reversible, chain-driven rod and tubing hoist, in place of the customary bull-wheels and sand-reel.

The hoist is preferably equipped with a friction-clutch mechanism which permits of speed acceleration under load. With such an installation, it becomes unnecessary to reverse the motor when pulling rods and tubing, the reverse motion necessary in lowering lines, tubing-hook and elevators being secured by releasing the clutch of the hoist and allowing the suspended equipment in the derrick to coast down on the brake by its own weight.

Where mechanical provision for speed acceleration under load is not made, the double-rated, single, variable speed motor must be used in connection with the geared pumping

2. Godde, G. A., and Williams, W. L., "Power Equipment for Drilling and Producing Oil Wells," Summary of Operations, California Oil Fields (California State Mining Bureau) Vol. 8, No. 4, October, 1922.

3. Gleim, E. J., "The Explosibility of Methane-Air and Gasoline-Air Mixture, as Related to the Design of Explosion-Proof Electric Motors," U. S. Bureau of Mines, Repts. of Investigations No. 2422, Dec., 1922.

4. Note: Theoretically, the power delivered should be equal to the product of amperes flowing and the voltage used, but practically, wattmeter readings will show a lower effective power by an amount depending upon the characteristics of the motor. The ratio of the wattmeter reading to the product of the amperage and the voltage, expressed in percentage, is the "power factor."

units, and reversing control for the motor must be provided.

The double-rated, two-speed ("star-delta") motor, in which the two speeds are not adjustable, can be used in pumping service at considerable saving in installation expense, through the use of the Ford Torque-Regulating Clutch.

This device consists of an automatic, centrifugally operated clutch, which provides for gradual speed acceleration in starting the motor from rest under load, thus relieving the acceleration strains on the pumping equipment, and greatly reducing the peak-load rating curve. It also provides the necessary speed reduction through the use of reduction gearing of the "sun and planet" type, thus permitting of direct driving of the band-wheel by belt or chain, without the use of an intermediate countershaft.

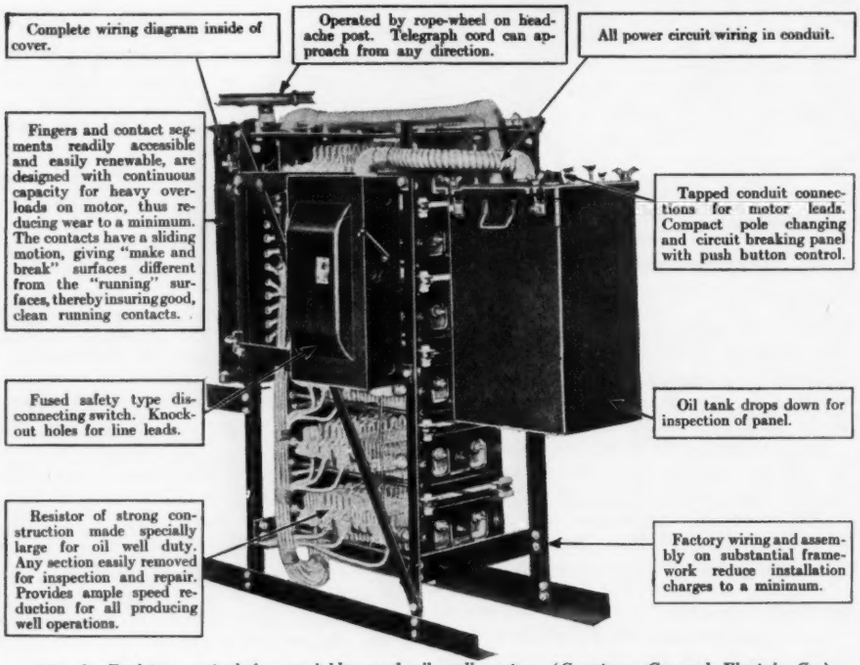

Complete wiring diagram inside of cover.
Operated by rope-wheel on headache post. Telegraph cord can approach from any direction.
All power circuit wiring in conduit.
Fingers and contact segments readily accessible and easily renewable, are designed with continuous capacity for heavy overloads on motor, thus reducing wear to a minimum. The contacts have a sliding motion, giving "make and break" surfaces different from the "running" surfaces, thereby insuring good, clean running contacts.
Tapped conduit connections for motor leads. Compact pole changing and circuit breaking panel with push button control.
Fused safety type disconnecting switch. Knockout holes for line leads.
Oil tank drops down for inspection of panel.
Resistor of strong construction made specially large for oil well duty. Any section easily removed for inspection and repair. Provides ample speed reduction for all producing well operations.
Factory wiring and assembly on substantial framework reduce installation charges to a minimum.

Fig. 2—Resistor control for variable-speed oil well motor. (Courtesy, General Electric Co.)

This clutch thus performs mechanically the work ordinarily done by the rheostat, resistance grids and compensators that must otherwise be provided as a part of the motor equipment. It is thought that this device would be particularly useful in remote control of wells where intermittent pumping is practiced.

Another plan that may be followed with economy and satisfaction in the operation of wells of shallow and moderate depth, is that of using a single-rated, constant-speed, "squirrel cage" motor for pumping service, and a variable-speed, slip-ring motor geared to a hoisting drum for pulling and cleaning purposes. The latter unit is mounted on a truck or tractor and moved about from well to well as needed.

Such a plan permits of maximum economy in that the pumping motor selected may be of inexpensive type, and of such size as to operate at highest efficiency, and without the necessity of using complex and costly control equipment. One of the most notable exponents of this system of electrical operation, is the Midwest Refining Co., which operates 1260 motor-driven, beam-actuated pumps in wells averaging 1800 feet in depth, each well being equipped with a 5 h.p. constant speed, "squirrel cage" motor operating at a speed of 1200 r.p.m.

To take care of rod-pulling operations on this group of wells, 32 portable outfits are used, each consisting of a 20 h.p. slip-ring, single-variable speed motor geared to a small hoist, each outfit being mounted, together with the necessary controls, on a 1½ ton motor truck. The portable outfit can be quickly "plugged in" on the power circuit at any well.

For pulling tubing, bailing, and swabbing, 24 heavier and more powerful portable outfits are provided, each equipped with a 40 h.p. motor and large hoist, mounted on a 3 ton truck or on a trailer which can be moved about with a Fordson tractor.

It is claimed that the total investment in these pumping motors and portable outfits is 60 per cent less than the investment that would have been necessary had the wells been equipped with individual 35/15 h.p. variable-speed motors.[5] It was also found that serious power distribution difficulties were avoided through the adoption of this type of equipment.

Of the three types of motors for oil-well service mentioned above, the double-rated, constant speed, "squirrel cage" motor costs only about one-third as much as the double-rated motor having two variable speeds, with its necessary control equipment; while the double-rated, single variable-speed motor costs about three-fourths as much. The least expensive of these three types, is also the most efficient and has the lowest maintenance cost.[6]

With squirrel-cage motors, the efficiency and power factor will be inherently higher than is possible with the variable-speed motors, due to their higher speed of operation and because the squirrel-cage motors, if properly selected as to size, will be operated more nearly under full load at all times.[7]

The economy of the constant speed motor, however, must be balanced against the greater flexibility and utility of the variable speed motor, and the difficulties encountered in the use of portable pulling equipment, particularly where the wells are deep and widely separated, or difficult of access.

Power Requirements For Pumping And Well-Pulling Service

THE power required to pump a well is small in comparison with that required in pulling rods and tubing and in bailing and swabbing operations. Pumping requirements range from 4 to 25 h. p., depending upon the depth of the well, size of tubing and rods, length and rate of stroke, viscosity and density of the well fluid, and rig friction.

The power for pulling and cleaning operations may range up to 120 h. p. or more, depending upon the hoisting speeds, depth of the well, size of tubing and other related factors. Anderson[8] reports watt-meter readings on a 3,600-foot pumping well equipped with 2½" tubing and ¾" rods and pumping 390-bbls. of fluid per day, using twenty-eight 32" strokes per minute, as follows:

Character of load	Motor r.p.m.	Average h.p.
Rig-friction only	495	4.6
Pumping without counterbalances	450	15.3
Pumping with counterbalances	460	14.0

The same writer reports power demands for pulling and cleaning operations in a 2500-foot well, equipped with a 35/15-h. p. two-speed motor

(*Continued on page* 31)

5. Peake, A. W., and Prior, F. O., "Use of Electricity in Wyoming," a paper presented at the Fort Worth meeting of the Petroleum Division, A. I. M. & M. E., October, 1927, and printed in the Oil and Gas Journal, issue of Nov. 3, 1927, p. 78.

6. Mc.Cargar. D. M., "Electrical Applications in the Petroleum Industry," Mechanical Engineering. (Am. Soc. of Mech. Engrs.) October, 1927, pp. 1107-8.

7. Dralle, H. E., "The Trend of Electrification in the Petroleum Industry," a paper read before the Los Angeles Meeting of the American Petroleum Institute, Jan. 21, 1926, and published in the A. P. I. Bulletin, Vol. VII, No. 27 pp. 70-72.

8. Anderson, H. H., "Application of Electric Motors to Oil-Well Drilling and Production Practice," a paper read before the Los Angeles Section of the A. I. E. E. and printed in the October, 1927 issue of Oil Field Engineering, pp. 35-46.

Present Laws of Most States Permit Development of Truck Hauling

By Paul Truesdell
N. P. N. STAFF WRITER

CLEVELAND, April 16

SOME of our United States place no restrictions whatever upon loads that can be carried on trucks over their highways.

Other states have restrictions of such a reasonable nature that refiners would be able to develop bulk hauling of gasoline from refinery to bulk station on a money-saving basis without danger of running foul of the law.

In still other states it appears that considerable educational work will have to be done with the state legislators before long distance hauling of gasoline can be carried on on a scale that will make possible savings over railroad transportation.

It would seem that state legislatures, in formulating highway laws, could not do better than follow the findings of the engineers of the Bureau of Public Roads of the U. S. Department of Agriculture. These findings, as reported last week* are that "The six-wheel truck is the motor designers' solution of the problem presented by the demand for vehicles which will carry heavy pay loads without violation of restrictive regulations adopted for the protection of the highways."

In this discussion, 6000 gallons of gasoline is taken as the ideal pay load to be carried on a six-wheel truck and trailer, because that was the load figured out by the trucking contractor in California who first sold the oil companies in that state on the economy of shipping their gasoline up to 200 miles by truck instead of by tank car.

It is recognized, of course, that under certain circumstances and for certain distances, a much smaller load can be hauled at a saving, the above figures being taken simply as representing the maximum and minimum load economical to carry on comparatively very long hauls.

In order to find out the attitude of the states toward hauling gasoline in large capacity trucks over the roads for long distances, NATIONAL PETROLEUM NEWS asked the highway department of each state about it. Thirty-three states sent in their laws.

In some states the laws are so written it is impossible to tell whether six-wheel trucks would be permitted to carry maximum loads because, when some of the laws were drawn, it is plain that the six-wheel vehicle had not been thought of. This notwithstanding that all of the laws are modern in date, nearly all of them having been revised and brought up to date either last year or this year.

Some states mention the six-wheel truck and trailer specifically, however, and a good many differentiate between the truck and trailer, each carrying a pay load, and the truck tractor and semi-trailer which has been developed in some communities to a large extent for hauling big loads of gasoline for considerable distances, particularly from bulk plants to filling stations where the storage capacity is large enough to take a big dump.

IN ALMOST every state it appears that the truck and true trailer are regarded as separate units, each privileged to carry the maximum load allowed a motor vehicle, while the truck tractor and the semi-trailer are regarded together as a single unit. Most states use the same definitions in substance for these vehicles as Alabama, as follows:

A truck tractor is a vehicle designed and used primarily for towing other vehicles and not so constructed as to carry a load other than part of the weight of the vehicle and the load so drawn.

A semi-trailer is a vehicle of the trailer type so designed and used in conjunction with a motor vehicle that some part of its own weight and that of its own load rests upon or is carried by another vehicle.

A trailer is a vehicle without motive power designed for carrying property wholly on its own structure and for being drawn by a motor vehicle. The trailer stands upon its own four or six wheels.

The laws of the states examined are practically uniform, where the matter is mentioned, in prescribing eight feet as the maximum width for a loaded truck and fourteen feet as the maximum height of a vehicle. Some states prescribe a maximum height of 12 feet.

In order to understand what the laws of the states mean with reference to carrying big pay loads, the following estimate of weights is given, based on a load of 3000 gallons of gasoline on truck and trailer each or a total of 6000 gallons.

A 5-ton truck on which is mounted a 3000-gallon tank, truck men say would weigh about 15.000 pounds or seven and a half tons.

Three thousand gallons of gasoline would weigh, figuring 6 pounds to the gallon, 18,000 pounds, or nine tons, making a total of 16½ tons for truck and load, or 33,000 pounds. In the light of this, the laws of the states that sent them back in will be analyzed below:

Alabama

Maximum load allowed, 16,000 pounds per axle, making a total allowable load of 32,000 pounds on a four-wheel truck or 48,000 pounds on a six-wheel truck. This is gross load, including truck and cargo. Only one trailer is allowed, except that, where a truck tractor-semi-trailer unit is used, one trailer may be hauled also. Maximum length of a single vehicle, 33 feet. Maximum length of train, 85 feet. Maximum distance between truck and trailer, 15 feet.

This, of course, would let the six-wheel truck and six-wheel trailer, each carrying 3000 gallons of gasoline, cruise the roads at will with plenty of margin to spare.

Arkansas

Maximum load on four-wheel truck 22,000 pounds; 28,000 pounds on six-wheel truck when front and rear axles are not less than 96 inches apart. Only one trailer is allowed to a truck except that a truck and semi-trailer unit may haul a trailer. Maximum length of single vehicle 33 feet; of train, 85 feet.

FIGURING gasoline at 6 pounds to the gallon or 333 gallons to the ton, this restriction would cut down the maximum load about 1000 gallons below the 3000-gallon mark.

California

This state is the home of big volume, long distance hauling of gasoline from refinery to bulk station. The maximum load allowed on a four-wheel truck is 22,000 pounds, while gross load allowed on a six-wheel vehicle is 34,000 pounds, which makes a 6000-gallon load possible.

However, according to the highway department of that state, the large amount of hauling of gasoline in 3000-gallon loads is causing undue maintenance expense on the highways and a recommendation has been made to the legislature that a gross load limit of 14,000 pounds for each rear axle be made the maximum instead of 18,000 as at present, or 7000 pounds for each wheel or 600 pounds for each inch of tire width.

It seems likely that the damage to the road is caused by the fact that hauling of oil has reached large proportions on roads that were little traveled before and that would show similar increase in upkeep cost even

*NATIONAL PETROLEUM NEWS, April 11, p. 28.

if the loads being hauled over them were smaller.

Colorado

Maximum load, 14 tons on four wheels or 700 pounds per inch of tire width except by written permission of highway commissioners. Nothing said about six-wheel vehicles.

Georgia

Maximum load for four-wheel truck, 22,000 pounds.

Idaho

Maximum load, 500 pounds per inch of tire width. One trailer permitted.

Illinois

Maximum load, 16,000 pounds per axle, or 32,000 pounds for a four-wheel truck and 48,000 pounds for a six-wheel truck.

Indiana

Maximum load, 28,000 pounds for truck or truck and semi-trailer.

Kentucky

Maximum load 800 pounds per inch width of tire.

Louisiana

Maximum load 15,000 pounds on rear axle or 600 pounds per inch of tire width.

Maine

Maximum load on four wheels 20,000 pounds if weight on any wheel does not exceed 600 pounds per inch width of tire or axle load does not exceed 16,000 pounds. Maximum load on six-wheel truck 13,500 pounds per axle or 700 pounds per inch width of tire.

Maryland

Maximum load on four wheels, 25,000 pounds; on six wheels, 40,000 pounds.

Massachusetts

Maximum load 28,000 pounds and not more than 800 pounds per inch of tire width. No greater load allowed on six-wheel truck than on four wheels.

Michigan

Maximum load between June 1 and March 1, 18,000 pounds per axle; during April, May and June on concrete pavements, 13,500 pounds per axle; during April, May and June on all roads except concrete pavements with concrete base, 10,000 pounds per axle.

Maximum length one vehicle, 40 feet; maximum length truck and trailers, 60 feet.

Minnesota

Maximum load 22,000 pounds heavier allowed on six-wheel than on four-wheel trucks.

Mississippi

No state restriction on loads. Some counties have laws based on 600 pounds per inch width of tire.

Missouri

Maximum load on four wheels, 24,000 pounds; on truck and semi-trailer, 38,000 pounds.

Nevada

Maximum load on four wheels, 25,000 pounds; on six wheels, 30,000 pounds.

New Jersey

Maximum load 30,000 pounds. No difference made between four-wheel and six-wheel vehicle.

New York

Maximum load on one truck whether four or six-wheel, 28,000 pounds. Maximum load for truck and trailer or truck and semi-trailer, 42,000 pounds.

Ohio

Maximum load 20,000 pounds on four-wheel or six-wheel truck.

Oregon

Maximum load on four wheels, 20,000 pounds; on six wheels 600 pounds per inch of tire width.

Pennsylvania

Maximum load 26,000 pounds; and 800 pounds per inch of tire width.

Rhode Island

Maximum load for four wheels 28,000 pounds; for six wheels, 40,000 pounds.

South Carolina

Maximum load "four wheels or less" 20,000 pounds. No mention of six-wheel trucks.

South Dakota

Maximum load, 20,000 pounds. No mention of six-wheel trucks.

Tennessee

Maximum load, 20,000 pounds. No difference for six-wheel trucks.

Utah

Maximum load 20,000 pounds.

Vermont

Maximum load, 16,000 pounds.

Washington

Maximum load, 24,000 pounds for four wheels; for six wheels, 27,500 pounds.

West Virginia

Maximum load, 20,000 pounds. No mention of six-wheel trucks.

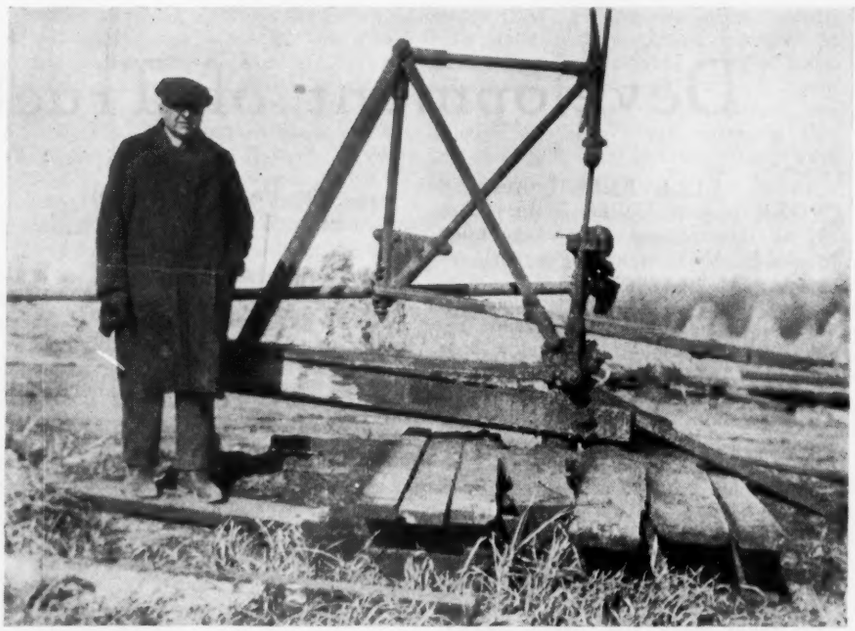
Wisconsin

Maximum load on truck, 24,000 pounds. No difference for six-wheel trucks.

Wyoming

Maximum load, 25,000 pounds.

This Well Producing for 41 Years



This well has been producing for 41 years. It is the Ohio Oil Co.'s No. 1 Fuher and Villwock, Wood county, Ohio. The man is C. S. Swartz, who has been with this company for 39 years, and district foreman where this well is located for 22 years

FINDLAY, Ohio, April 16.—The Ohio Oil Co.'s No. 1 Fuher and Villwock well in Freedom township, Wood county, Ohio, which has been producing for 41 years. This well was drilled by Fuher and Villwock in 1887 and was purchased by the Ohio Oil Co. in June 1889.

With the country a swamp for miles around, the operators and pipe line men wading more than knee deep through the marsh, material was hauled for this well, which was drilled to 1193 feet, six feet in the Trenton, bringing in enough gas to supply the town of Prairie Depot with fuel for some time. Later the well was deepened a few feet and oil was encountered at 1198 feet, total depth 1208 feet. It has been producing since that time. It is hooked up once a week and pumps off in 40 minutes, making one barrel, and no water. This is one of several hundred old wells in this locality that are still producing.

There is no water nor corrosion to contend with in this area and the pipe in this well has been there for 30 years.

C. S. Swartz, who is shown in the picture, has been with the Ohio Oil Co. for 39 years and has been district foreman where this well is located for 22 years.

Oil Marketing Trends to More Stable Conditions, Survey Finds

THE trend in gasoline and lubricating oil marketing is toward attractive, well planned and well equipped service stations of moderate cost, located only after careful analysis and test of the factors that control gallonage. A more stable sales policy is developing.

This statement of the probable course of motor fuel and motor oil marketing in the next few years is the kernel of the summarization of a survey made for S. F. Bowser & Co., Fort Wayne, Ind., by Peat, Marwick, Mitchell & Co., accountants. The results of the survey have just been released to the marketing division of the petroleum industry.

Prediction also is made that a great many existing stations will be eliminated in the next few years because they lack economic reason for existence. Consolidations will take place also, extinguishing many present bad marketing practices, chief of which, according to the findings of the surveyors, is the present system of leasing or loaning equipment.

The Bowser survey estimates the total number of gasoline outlets in the United States at 317,000 which had 604,000 pumps when the canvass of many sources of information was made last fall. This estimate is considerably lower than many previous estimates of the number of gasoline pumps in the United States.

The number of pumps is three times the number needed to serve properly the number of automobiles in operation, this report brings out.

The gasoline outlet and pump figures are tabulated in the Bowser report as follows:

	Stations	Pumps per station	Total pumps
Drive in:			
Owned and operated by major oil companies	6,000	4	24,000
Owned by major oil companes but leased to private individuals	6,000	3	18,000
Owned by large oil companies	8,000	3	24,000
Total company stations	20,000	3.3	66,000
Owned by independent oil companies and private individuals	105,000	2.3	245,000
Total drive-in	125,000	2.49	311,000
Garage with car storage	52,000	2	104,000
Curb and road-side fills	140,000	1.35	189,000
Total retail outlets	317,000	1.9	604,000

The first classification "Major Oil Companies" includes not only the Standard Oil companies, but such large Independents as The Texas Co., Gulf Refining Co., Sinclair Refining Co., Union Oil Co., and several smaller.

The "Large Oil Company" classification embraces the smaller integrated companies and distributing companies that may have a refinery that produces all or part of its requirements for the retail market. Jobbers are included mostly in the "Independent Oil Company" classification, in which also is grouped the individual drive-in service station owners. All but the individual service station owners may wholesale to the garage and curbside gasoline outlets.

Need for gasoline outlets which followed a large overproduction of crude oil and gasoline beginning several years ago and continuing until the time the report was written, is blamed for present marketing conditions.

Competition for outlets became so keen that, in many cases, wholesale and retail earnings were disregarded, the surveyors found. The competition for gallonage amounted to warfare. About this phase in the development of outlets, the survey report says:

"The first step in this warfare was an attempt by refiners and independent oil companies owning bulk storage plants to secure existing retail outlets by means of subsidies of various sorts.

"These subsidies, which became greater as competition became more acute, consisted of pumps, tanks and equipment offered to retailers on equipment leases of a nominal character, of buildings, of grading, and painting and even of cash, as inducements to market the products of a particular wholesaler. Quantity discount systems were established only to become ineffective when the quantity discounts were demanded by all.

"Price cutting either directly or in the form of rebates became prevalent. Retail outlets increased enormously as all sorts of people were induced to enter the retail field, and owners of businesses of every variety located on the streets and highways near traffic were induced to accept equipment in order to increase gallonage.

"In districts where freight rates from the various oil fields and refineries were such as to render competition for wholesale outlets most severe, the small Independent oil company operating the small refinery known as a skimming plant or owning a bulk storage plant came into existence in great numbers and flourished on the competition of the large producers and refiners or on distress gasoline. The competition of these Independents added to the general chaos of the scramble for retail outlets.

"Conditions under this subsidy system became so bad in 1924, when gasoline and oil stocks in terms of day's consumption were at their peak, and in the year or two following, that the larger oil companies apparently began to realize that the interest on the investment required to own the better sort of retail outlets, might amount to less per annum than the expenditure in subsidies and price cuts to retailers, required to hold them as outlets for their gallonage. They began to acquire their own stations.

"Although this movement has gained increasing headway the last few years, competent authorities estimate that between 85 and 90 per cent of all gasoline handling equipment is still owned by the oil companies large and small and loaned to the retailer on the nominal equipment lease basis.

"On this basis 513,000 pumps and tanks valued at $154,000,000 are out on equipment leases. Repairs and depreciation on this investment probably amounts to $36,000,000 annually and interest on the investment to $9,000,000 bringing the annual charges

Petroleum Marketing Is Surveyed

WHAT is the trend in the marketing division of the oil business?

Some observers lately have been able to discern a more stable policy in development. Among these observers was the management of S. F. Bowser & Co., manufacturer of petroleum dispensing equipment.

To gain a better knowledge of the conditions that have disturbed the marketing of petroleum the last four or five years, this company commissioned a firm of accountants and industrial investigators to ascertain the facts and give it an unbiased and unprejudiced report on present conditions and what may be expected in the future.

NATIONAL PETROLEUM NEWS, with the permission of the Bowser company's president, S. B. Bechtel, presents a summary of some of the outstanding findings of the survey. Details of the report will be summarized in subsequent articles.

for maintaining this system to $45,000,000.

"While this investment in leased dispensing equipment seems large, the fact must be kept in mind that it represents only 1.4 per cent of the $11,000,000,000 investment in the petroleum industry. Under the circumstances it can easily be understood why the major and large oil companies and the larger wholesalers, whose investment represents probably 90 per cent of the total investment in the industry, seized upon such a system (leased equipment) of controlling outlets for the sake of securing gallonage when stocks of gasoline and crude reached alarming heights in 1923 and 1924.

"When this competition for retail outlets reached the point where the establishment of so many dispensing points was stimulated by offers of free equipment and other subsidies, and gallonage sold per outlet was in a great many cases so reduced that a large number of stations ceased to be profitable, the oil companies began to seek other means of controlling outlets. The result was a marked increase in the number of company owned stations.

"At present it is estimated that about $245,000,000 is invested in such stations, which represents about a third of the investment in drive-in stations, or in all stations, if garages, and curbside and roadside fills are regarded primarily as investments in other businesses.

"This investment of $245,000,000 in company-owned stations represents perhaps 2.7 per cent of the total investment of the companies owning them. Annual charges on equipment installed in such stations should not amount to over $5,800,000 including interest. Inasmuch as this plan gives the oil companies absolute control of outlets it would seem as if they might well afford to continue a program of acquiring stations at strategic points, especially as the mortality among low grade, poorly located and inadequately financed companies is very great.

"Estimates of the gallonage dispensed through the different classes of retail outlets indicate that about 9 per cent of the annual sale of 9,700,000,000 gallons is through some 12,000 stations owned by major oil companies, 58 per cent through the 113,000 stations owned by other large oil companies and independents, who are principally wholesalers, and by private owners of drive-in stations; 15 per cent by garages; 16 per cent by curb-side and road-side fills and about 2 per cent by direct sale to the consumer.

"Available statistics indicate that lubricants and gasoline stood fifteenth on a list of the principal advertisers in national magazines, having expended in 1926 only about 11 per cent as much as the automotive industry, which came first on the list. Only a little over 5 per cent of this amount was expended for advertising gasoline. When the expenditures for gasolines and lubricants in both classes are combined, the industry ranked tenth, having spent about 15 per cent as much as the automotive industry.

"On the basis of annual volume of sales in dollars the petroleum industry ranks fourth. On a basis of cents expended for advertising per dollar of sales, it ranks fourteenth.

"Considerable divergence of opinion exists in the industry as to what constitutes sound merchandising. Considerable ignorance of principles and methods of merchandising, which have proved sound in other industries also exists.

"Much of this ignorance is coincident with the existence of capital which has been accumulated as the result of fortunate discovery or location. This condition, in all probability, will continue to exist until such time as the capital in question has been sufficiently dissipated to eliminate its owners from the field of competition, such as occurred in the automobile industry during its period of stabilization.

"During this period of survival of the fittest there will undoubtedly occur a considerable improvement in merchandising methods among the more enlightened retailers, large and

Counts in Bowser Survey Indictment of Leased Equipment

1. A heavy burden in the form of a large investment and heavy annual charges for depreciation, repairs and services is imposed upon the oil companies who, by the use of the equipment lease system are in effect subsidizing the retailers.

2. This subsidizing leads to demands for further subsidies of various sorts, all of which encourage inefficiency upon the part of retailers who are not inclined to depend on hard work and good merchandising for profits which can be secured more easily by playing one oil company against another.

3. The practices tend to demoralize also the sales organization of the oil companies, which become concerned with the dispensation of patronage, rather than with effective merchandising. In some cases salesmen have hesitated to make calls on the trade, fearing continued and unreasonable further demands.

4. It encourages over-stationing because an oil company will authorize the lease of a pump on a new location where it would not incur the expense of erecting a station. Very often this occurs at a point where the result is the withdrawal of gallonage from its own stations in the neighborhood and from other stations that operate its pumps. This in effect constitutes an act of bad faith with its own station employes who are on commission, and with the retailers to whom pumps have previously been leased, and materially increases the wastes of retail distribution as well as of wholesale distribution, since more tank trucks are required to supply an over-stationed district.

5. In addition to the initial subsidies attendant upon the establishment of a new outlet, further subsidies are from time to time demanded and granted with continued demoralization of both retailers and wholesalers.

6. Retailers are encouraged to demand the latest type of equipment which burdens the industry with the expense of unnecessary style obsolescence.

7. Retailers, since they do not own the equipment, are not inclined to take good care of it so that repairs are unnecessarily high.

8. If the oil company loses the contract it is forced either to leave the tank in the ground or go to considerable expense to remove it. Where retailers are unreasonable and inclined to trade and to bluff for concessions, this becomes an important item of expense as the system encourages such practices.

9. Proper enforcement of credit restrictions is often hampered by fear of losing the outlet to a competitor.

10. The practice tends to keep down the average quality of outlets and representation which leads to unfavorable impressions of the product by the public and to substitution and dishonesty under the name of the oil company that furnishes the pump.

11. In addition this low grade representation leads to all sorts of claims upon the oil companies for shortages, leakages, repair parts, etc., which must frequently be satisfied because the equipment furnished is in many cases cheap and inaccurate due to the natural effort of the oil companies to maintain a minimum investment in leased equipment.

12. The system attracts an irresponsible and dishonest class of retailers to the field, thereby injuring the general standing of their retailing business with the public and creating a general suspicion of all station operators.

13. Irresponsible retailers of this class tend to carry bad credit risks, the burden of which is passed on the whole class of retailers in the form of higher wholesale prices because of the oil companies' necessity to recoup such losses.

14. A large part of the high cost of retailing due to over-stationing which is encouraged by the system, must be passed to the public in the form of higher prices.

15. The system encourages the erection of cheap unsightly stations with the result that stations are generally regarded as a blot on the landscape.

small. Territories tributary to stations will be more intensively and systematically cultivated, advertising of all sorts will be done more intelligently, a more determined effort will be made to fill in off-peak periods and an increasing number of companies will undertake systematic surveys of their markets to enable them to determine sales policy upon a basis of facts.

"Scientifically located and efficiently operated stations will become more prevalent, and integration throughout the industry will undoubtedly increase through the medium of consolidation, with the result that the elimination of low grade outlets, without economic reason for existence, will be hastened. All this will take time, but the result should ultimately be of great benefit to the industry and to the public, just as it has in the case of the automobile industry."

Hickey Back in Business With Better Health

CHICAGO, April 14.—Allen F. Hickey, well known among jobbers and refiners, has sufficiently recovered from a long illness to become active in business again. He is organizing a bulk sales department for Industrial Petroleum Corp., 624 South Michigan Ave., Chicago, to handle gasoline, kerosene and lubricating oils. Heretofore Industrial Petroleum Corp. has specialized in fuel and gas oils. Mr. Hickey will be in charge of the new department.

"Al" Hickey has been in the refining and car load marketing end of the oil business for 20 years. After mature experience in refining in Pennsylvania he became associated with Johnson Oil Refining Co., Chicago. He was later associated with John M. Carson in the Taxman Refining Co. and the Mid-Continent Petroleum Corp., as assistant general sales manager. He left Mid-Continent on account of ill health about two years ago.

Federal Trade Body Probes Price War in South

WASHINGTON, April 14.—Examiners from the Federal Trade Commission have been sent to Alabama and Georgia to get the "low down" on a price war that has been in progress there for about two months.

Reading between the lines of formal statements filed by Independent oil men with the Commission, it would seem that the battle is drawn between the Pan American Petroleum Corp., and the Gulf Refining Co.

Liberty Oil Co. Ltd. of New Orleans, a refiner; Interstate Oil Co. of Montgomery, Ala.; Alabama Oil Co. of Gadsden; Alabama Oil Co. of Huntsville, and the Alabama Oil Co. of Hollywood, Ala., all jobbers, together with the Alabama Independent Oil Marketers Association, invoked the action of the Federal Trade Commission.

H. D. Smith Jr., vice president of the Liberty Oil Co.; W. B. Britton, general manager of the Interstate Oil Co., and B. E. Holman, president of the three Alabama Oil companies, each went before the commission representing their own interests and Judge Holman and Mr. Britton jointly appeared for the A. I. O. M. A.

The formal statement says in substance that the Gulf and Pan American differ as to marketing policy. The Gulf (like other big operators in the South) allows to certain preferred classes of trade, concessions under its regular posted prices—both tank wagon and filling station prices. The Pan-American on the other hand, cut out this practice at all Georgia and Alabama outlets last December, holding strictly to a flat tank wagon and a flat service station price, with a 3-cent spread between them, except to dealers. With the dealers (retail distributors) it inaugurated a special arrangement called the P. D. I. agreement.

This system might have worked along without damage to the market structure generally, other companies say, but for the fact that the Pan-American disregarded the posted prices of other big companies when they established their flat price system. Their flat retail price became the lowest actual selling price of the big competitors to their preferred retail customers, and their tank wagon price was 3 cents below that.

According to the complaint of the Independents, the Gulf met the Pan-American's prices, but did not eliminate concessions, as the latter had done. So the fight was on. The general price level went off 3 to 6 cents in Georgia and Alabama, getting down to 8 cents per gallon retail and 5 cents tank wagon in Montgomery, exclusive of tax. This, in spite of the fact that gasoline in tank cars delivered at Alabama and Georgia common points costs from 9 to 10 cents.

The Pan American Petroleum Corp., according to the formal statement, has set up its new sales policy only in Georgia and Alabama. It follows the example of the other major operators in Mississippi, Louisiana and Tennessee, i.e., setting up a posted price for the average buyer and selling under it to preferred customers.

For the benefit of persons who have never met the P. D. I. agreement in actual competition, it is a rental proposition. The big company representative finds a filling station owner in a small community (small town or city residential section) who owns his own place of business and has a good personality and business reputation.

The big company could not get this man's customers if they built a $50,000 station right across the street. Besides they know he can operate more cheaply than they can, so they make friends with him. They rent his place and hire him to run it for them. Contracts run from one to five years. The station owner must agree to sell at the big company's posted price.

The station owner gets a rent check from the oil company monthly. It amounts to about a half cent a gallon on his total business, estimated when the contract was signed. He stocks the oil company's complete line of goods, exclusively as a rule. He buys it on consignment and enjoys a commission on total sales. This runs about 3 cents a gallon on gasoline.

The Selection of Power for Pumping Service

(*Continued from page* 26)

with reduction-gear, chain-connected to a wooden standard rig, as follows:

Operation	Weight	No. of lines used	Motor r.p.m.	Max. h.p.
Pulling rods with bull-wheels	1,300	1	925	24
Pulling tubing with bull-wheels	28,600	2	725	98
Pulling tubing with bull-wheels	16,700	1	620	114
Bailing with sand reel	750	1	750	84

On the basis of operating data from many California and Mid-Continent electrically operated wells, Taylor[9] states that the lease power requirements will range from 60 to 150 kilowatt-hours per well per day, including both pumping and well pulling and cleaning operations. Peake and Prior[5] state that motor-driven, beam-operated wells in the Salt Creek field of Wyoming, mentioned in the previous section, consume an average of 60-kilowatt hours of power per well per day.

The wells have an average daily production of 20 bbls., and are 1800 feet deep. The power consumption per bbl. is therefore about 3 kwh., or 0.17 kwh. per 100-foot-barrel per day. It is said that smaller producers use more power per barrel of oil, regardless of depth, while deeper wells use more power per barrel of oil, but less per barrel-foot.

9. Taylor, W. G., "Electric Power in the Oil-Fields as a Central Station Load," General Electric Co., Technical Paper No. 503, 15 pp. 1920.

The Editors' Viewpoint

National Petroleum News

History in the Making

IT IS not being unduly emphatic to say that important history has been made this month in the Mid-Continent in the endeavor to rationalize development of oil fields.

The drilling of an oil field as a unit with attendant orderliness and speeding up or slowing down of operations to fit market needs, has long been discussed and has provoked much argument. The nays, until a short time ago, were as prominent in the discussion as the ayes. Now the fact that a committee of five men, representing the Mid-Continent Oil & Gas association and individually important as leading executives of major operating companies, has put its approval upon pooling agreements to develop wildcat fields has large significance.

It cannot be dismissed as an expedient to halt overproduction. The committee found the quickest way to stop wildcatting was the abandonment of the practice of supporting financially the man who leases several hundred or thousand acres and pays for the test well by selling parcels of the block. Merely ceasing to buy the acreage would be a form of shut down, transient in nature and affecting only the present overproduction.

But, the committee went a step further. It recommended that, where a wildcat must be drilled—and there are a number that must be to protect lease titles—no well be started until, to use the committee's language, the "prospective area has been unitized."

The form such pooling would take is of small consequence in the broad reckoning. The fact is that unit operation has been dignified by endorsement of an important committee and the oil industry is on its way to fundamental change in the manner of opening and developing new pools.—L. E. S.

Unsound Practices Defeat Themselves

THE Minnesota marketers are to be congratulated for their vigorous opposition to the Q. D. A. but whether they are to be commended for appealing to the state legislature for more law on the subject is a question.

One can almost put it down as fundamental that in this country today, if we haven't too many laws delving into business, we at least have enough. More laws are liable either to be ridiculous or else bring government more deeply into the operation of business, not a desirable thing.

The Q. D. A. is an abortion of a trade custom introduced because the price structure of gasoline was out of line. Instead of straightening up the price the Standard of Indiana put in the discount scale which only trifled with the main evil but did not cure it.

The tank wagon and service station price of gasoline was at a fictitious level so far as the average marketer and the newcomer to the oil business were concerned. They could both buy gasoline at the refinery for less than the Standard cared to charge its marketing department, hence they could undersell the Standard at a profit. And they did by the thousands.

As long as gasoline was, or is, moving freely from the refinery to all buyers in tank car lots, the refinery price is the basis on which the tank wagon and service station price should be built. If that had been done there would not have been room for quantity discounts, beyond whatever fraction of a cent a gallon saving there might be between supplying a large quantity customer and a small one.

But the Q. D. A., like all other things that are unbusinesslike and that are not sound economically, is bound to go. It already has traveled quite a way on the road out. Competition has, by discount and otherwise, forced down the price so that service station and tank wagon prices are largely fiction save for the casual small lot private car owner buyer.

Legislation against it, however is of most questionable value.—W. C. P.

Backing Up Professions with Performance

RESULTS gained by long hours of struggle and precision of workmanship brought to the geological profession finally the recognition its efforts merited. This does not mean, however, that every holder of a diploma calling himself a geologist, deserves to be credited individually with the recognition that the profession now commands.

There are shysters calling themselves geologists just as there are quacks practicing medicine. A similar statement may be made with regard to the engineering profession. The engineer who has won his spurs, so to speak, is taking his rightful place in the forefront of industry more quickly than the geologist did.

He has found fewer barriers of prejudice in his way, partly because the recognized geologist trod a rough and rocky road before him. Engineering, like geology, however, may not be followed blindly simply because the term "engineering" is intriguing. In common with every other professional man, whether in law, medicine or industry, the engineer must back himself with performance that counts in dollars and cents returns.—P. W.

Trying Your Own Oils on Your Trucks

SPEAKING of selling motor oil—There used to be a sales genius who ran a popular price restaurant in Cleveland. He advertised: "Findlay eats in his own restaurant." There was another restaurant owner who was said never to have eaten in his own restaurant. Obviously Findlay did the business.

Now comes the Standard Oil Co. of New York, and it "eats in its own restaurant," by advertising one of those selling points that an oil company can advertise and that

is, the record and performance of its own cars and motor truck equipment using its own oil and gasoline.

The oil industry is a big user of these products on its own equipment and yet we don't recall a single company that ever capitalized on that in selling its goods to the public. In fact it is rather a standing joke in the producing fields that you will find producing divisions of a big company buying oil from another company for its cars and trucks for no special reason at all except that someone sold it to them.

In some recent newspaper advertising the Standard of New York said:

> The Standard Oil Co. of New York owns and operates 4,000 cars. They are of many makes. They see hard service. Some of them have run from 90,000 to 100,000 miles with only minor repairs.
>
> Why is our automobile expense so much less proportionately than that of the average motorist? Principally because we use one gasoline—SOCONY—and one motor oil—SOCONY—and change the oil in every car every 500 miles.
>
> Oil is only 2 per cent of the cost of running a car. Using oil of inferior quality is the quickest way to ruin an engine. Standardize on SOCONY. Change it regularly and keep your car longer and pay less for repairs.

What more striking testimony could there be than for the Standard to write its own letter of testimony on its large fleet of trucks and cars—a fleet larger probably than any customer or prospective customer in its territory.

The average oil company probably couldn't testify much as to the consumption of oil and gasoline in its cars, because of the slip-shod methods followed in fueling and oiling the cars. Cars may receive good mechanical attention and may be oiled and fueled frequently enough, but probably little, if any, record is kept.

Undoubtedly marketers have said of a certain truck—that it has always run on their own oil—but how many thousands of miles and how many cents of repairs it had, they probably couldn't tell.

Yet the marketer's salesmen will go to truck fleet owners for this detailed data. Why not oil companies keep it themselves on their own equipment and then prove to their customers their own faith in their own goods by their successful use of those goods?—W. C. P.

The Co-op Movement

THE last year has seen the extension of the farmers' cooperative gasoline companies in three states into the wholesale buying field.

In Illinois 14 local gasoline and oil co-ops have their own central purchasing agency, the Illinois Farm Supply Co. It is managed by a board of directors made up of elected delegates from the county, or local, oil companies.

It started in business April 1, 1927, and, to Dec. 1, 1927, sold 261 cars of gasoline, 138 cars of kerosene, 37.5 cars of lubricating oils, 48,236 pounds of grease and 2471 gallons of denatured alcohol, according to an article in the Monthly Labor Review of the U. S. Department of Labor.

In Minnesota the wholesale buying agency is the Minnesota Co-Op Oil Co., which began business in March, 1927. In eight months this company bought 500 cars of gasoline and kerosene for 39 local co-op oil companies in that state. Its net sales amounted to $257,654 and its net trading surplus was $3474, the same article says.

In Nebraska the farmers' union has organized a state central purchasing agency, the Farmers' Union State Exchange at Omaha. Fourteen local organizations are buying through it.

A Minnesota farmer's cooperative organ comments as follows on the central buying agency there: "It is an extremely interesting fact that the Minnesota Co-op Oil Co. has been able to accumulate a quarter million business in eight months almost without a cent's capital."

That statement should be just as interesting to the oil marketing industry as to farmers in Minnesota. It is a reflection of the kind of sales competition that has featured the marketing of oil products.

Dollars to doughnuts this agency has bought on exactly the same terms as refiners and wholesale oil companies sold established marketers in this territory. Undoubtedly oil companies with their own distributing stations have sold this agency on perhaps better terms than their own stations were supplied.

The net result has been the taking by the farmers' co-op oil companies of considerable business in the good farming districts of the state.

The oil companies will have left to them, however, without competition from the farmers co-ops all the business in less profitable sections. Their prices to the public will have to be on the same basis, though, as in the profitable sections. The state will see to that. —V. B. G.

Don't Let Spring Days Fool You

SPRING weather comes a little too soon in Oklahoma. It is time to make garden early in March and the fruit trees have almost finished blooming before the first of April.

Perhaps that is the reason why Mid-Continent refiners have a tendency to get ready for summer gasoline demand about 60 to 90 days before the demand actually arrives. Almost without exception crude runs at Mid-Continent refineries are speeded up to an abnormal level in the early spring and almost every year there is a subsequent period of market depression induced by heavy spring stocks accumulated too far ahead of demand.

The same situation is developing in the Mid-Continent again this year. Crude runs at a group of representative plants in the past month have been almost up to the average maintained in June, July, August and September last year. While gasoline shipments have been excellent, the level of production has been too high for March.

Group 3 gasoline markets have shown an advancing tendency since the first of the year, giving refiners encouragement. The advances are as much a direct result of conservative winter operations as of the more optimistic outlook of the trade.

The ground gained thus far can be lost quickly in a rainy April and May if the level of production is kept too high. Only a minor change in the scale of operations is needed to correct the situation.

A decrease of only 5 per cent in the present volume of crude oil charged to stills in the Mid-Continent would avoid the possibility of a falling market at the opening of the season when prices normally should show their greatest tendency to advance.

A 5 per cent cut in crude runs in the Mid-Continent field is needed now.—J. C. C.

Compilation Of Mid-Continent Refinery Operations

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National Petroleum News

Mid-Continent Refinery Operations Week Ended April 13 (By Telegraph)

	Kansas	Oklahoma	North & Cent. Texas	North La.-Ark.	Total Week Ended Apr. 13	Total Week Ended Mar. 16
Plants Reporting	12	28	27	12	79	79
Crude Capacity (bbls.)	92,000	157,200	104,500	54,900	408,600	408,600
Cracking Capacity	30,700	52,600	16,200	22,700	122,200	122,200
Da. Av. Crude Runs	58,855 + 1.9	114,530 + 6.5	66,412 + 2.5	48,971 — 0.3	288,768 + 3.4	289,872
Da. Av. Other Oils	7,641 + 27.1	—440	4,151 — 22.2	973 + 30.8	12,325 — 7.1	13,064
GASOLINE—Gallons						
Stocks, Apr. 6	16,216,000	56,603,000	22,440,000	4,377,000	99,636,000	97,181,000
Prod. 4-6 to 4-13	8,565,000 + 1.8	18,679,000 + 18.6	7,549,000 + 12.7	4,792,000 + 1.7	39,585,000 + 11.3	38,603,000
Ship. 4-6 to 4-13	8,237,000 + 4.3	15,781,000 — 10.1	8,349,000 + 5.7	4,708,000 + 3.0	37,075,000 — 2.2	36,204,000
Stocks, Apr. 13	16,544,000 + 2.0	59,501,000 + 5.1	21,640,000 — 3.6	4,461,000 + 1.9	102,146,000 + 2.5	99,580,000
Ratio Sales to Prod.	96.2%	84.5%	110.6%	98.2%	93.7%	93.8%
KEROSENE—Gallons						
Stocks, Apr. 6	2,981,000	4,271,000	1,847,000	677,000	9,776,000	12,217,000
Prod. 4-6 to 4-13	1,838,000 + 14.9	2,893,000 + 16.8	1,821,000 + 26.3	335,000 — 15.0	6,887,000 + 16.5	6,788,000
Ship. 4-6 to 4-13	1,236,000 — 29.6	3,452,000 — 12.0	1,526,000 + 19.7	421,000 + 52.0	6,655,000 — 8.1	7,175,000
Stocks, Apr. 13	3,583,000 + 20.2	3,712,000 — 13.1	2,122,000 + 14.9	591,000 — 12.7	10,008,000 + 2.4	11,830,000
Ratio Sales to Prod.	67.2%	119.3%	84.9%	125.7%	96.6%	105.7%
STOVE DISTILLATE—Gallons						
Stocks, Apr. 6	1,440,000	2,463,000	1,065,000	45,000	5,013,000	5,477,000
Prod. 4-6 to 4-13	209,000 — 21.7	278,000 — 23.6	231,000 — 13.2	102,000 — 27.7	820,000 — 21.0	1,379,000
Ship. 4-6 to 4-13	225,000 +235.8	295,000 — 50.0	355,000 + 2.3	59,000 — 61.2	934,000 — 19.2	1,529,000
Stocks, Apr. 13	1,424,000 — 1.1	2,446,000 — 0.7	941,000 — 11.6	88,000 + 95.6	4,899,000 — 2.4	5,327,000
Ratio Sales to Prod.	107.7%	106.1%	153.7%	57.8%	113.9%	110.9%
GAS OIL—Gallons						
Stocks, Apr. 6	5,457,000	31,407,000	5,920,000	6,003,000	48,787,000	54,858,000
Prod. 4-6 to 4-13	1,612,000 + 18.4	1,347,000 — 73.1	876,000 — 22.8	1,741,000 — 14.2	5,576,000 — 41.5	6,020,000
Ship. 4-6 to 4-13	1,343,000 — 9.1	1,568,000 — 71.0	1,696,000 — 28.7	1,905,000 — 8.0	6,512,000 — 42.6	6,243,000
Stocks, Apr. 13	5,726,000 + 4.9	31,186,000 — 0.7	5,100,000 — 13.9	5,839,000 — 2.7	47,851,000 — 1.9	54,635,000
Ratio Sales to Prod.	83.3%	116.4%	193.6%	109.4%	116.8%	103.7%
FUEL OIL—Gallons						
Stocks, Apr. 6	12,989,000	28,448,000	39,023,000	17,197,000	97,657,000	92,783,000
Prod. 4-6 to 4-13	6,951,000 + 3.4	7,438,000 + 36.4	8,715,000 + 2.3	6,971,000 — 2.5	30,075,000 + 8.1	31,352,000
Ship. 4-6 to 4-13	6,609,000 + 12.6	3,697,000 — 29.6	9,257,000 — 2.9	6,048,000 — 10.6	25,611,000 — 6.6	31,270,000
Stocks, Apr. 13	13,331,000 + 2.6	32,189,000 + 13.2	38,481,000 — 1.4	18,120,000 + 5.4	102,121,000 + 4.6	92,865,000
Ratio Sales to Prod.	95.1%	49.7%	106.2%	86.8%	85.2%	99.7%

Gasoline Produced by Various Methods, Week Ended April 13

	Kansas	% of Total	Oklahoma	% of Total	Texas	% of Total	Louisiana-Arkansas	% of Total	Total	% of Total
Straight Run	5,416,000	63.2	13,950,000	74.7	5,604,000	74.2	1,871,000	39.1	26,841,000	67.8
Cracked	2,558,000	29.9	3,542,000	19.0	1,596,000	21.2	2,186,000	45.6	9,882,000	25.0
Natural	591,00	60.9	1,187,000	6.3	349,000	4.6	735,000	15.3	2,862,000	7.2
Total	8,565,000		18,679,000		7,549,000		4,792,000		39,585,000	

+ or — columns are % change from previous week.

Gasoline Stocks Rise When Refiners Increase Crude Runs

Staff Special—By Telegraph
TULSA, April 17

CRUDE runs at 79 Mid-Continent refineries were increased 9523 barrels daily average in second week of April. Average runs for the week were 288,768 barrels a day. This is almost on a level with runs in the last half of March when refiners first began to increase their throughput.

While production of gasoline was being increased weather in the general consuming territory was unfavorable so shipments fell nearly 1,000,000 gallons to 37,075,000 gallons. Total production of gasoline last week was 39,585,000 gallons. Stocks April 13 totaled 102,146,000 gallons, an increase of 2,510,000 gallons or 2.5 per cent.

In the week ended April 15, 1927,

Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended April 13. Change in stocks figured from March 16.

GASOLINE

	Gallons
Production	152,987,000
Shipments	150,421,000
Net change in stocks	+ 2,566,000
Ratio sales to production	98.3%

KEROSENE

	Gallons
Production	25,671,000
Shipments	27,493,000
Net change in stocks	— 1,822,000
Ratio sales to production	107.1%

STOVE DISTILLATE

	Gallons
Production	4,389,000
Shipments	4,817,000
Net change in stocks	— 428,000
Ratio sales to production	109.8%

GAS OIL

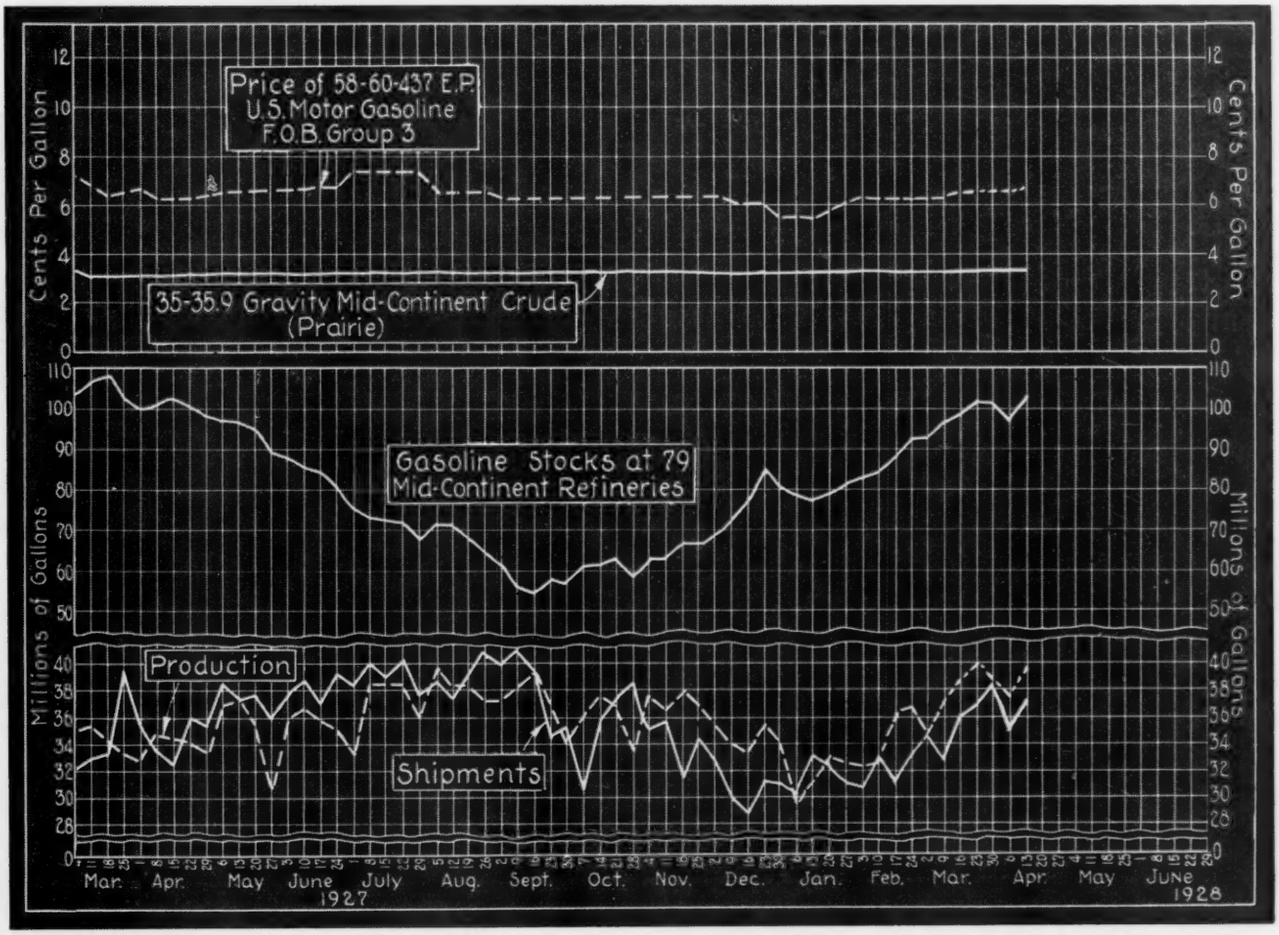
	Gallons
Production	27,527,000
Shipments	34,311,000
Net change in stocks	— 6,784,000
Ratio sales to production	124.6%

FUEL OIL

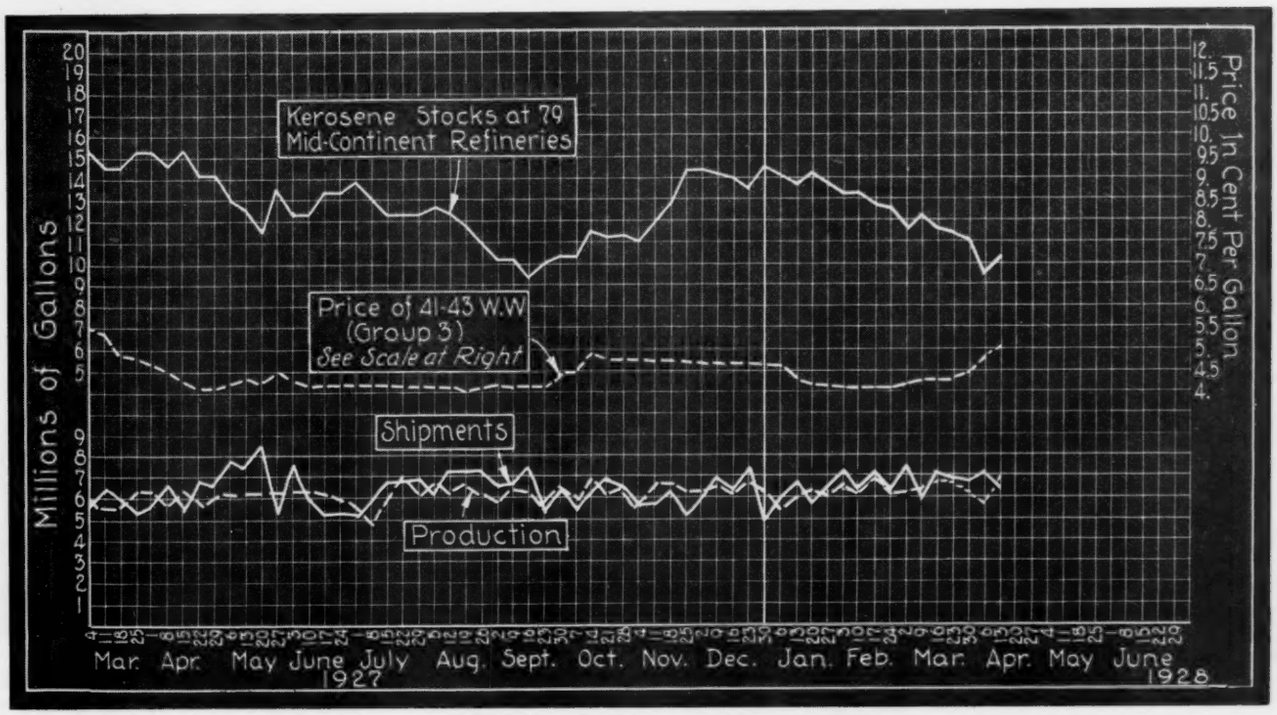
	Gallons
Production	117,048,000
Shipments	107,792,000
Net change in stocks	+ 9,256,000
Ratio sales to production	92.1%

Barometer of Mid-Continent Refinery Market—Week Ending April 13

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 79 Plants to National Petr oleum News

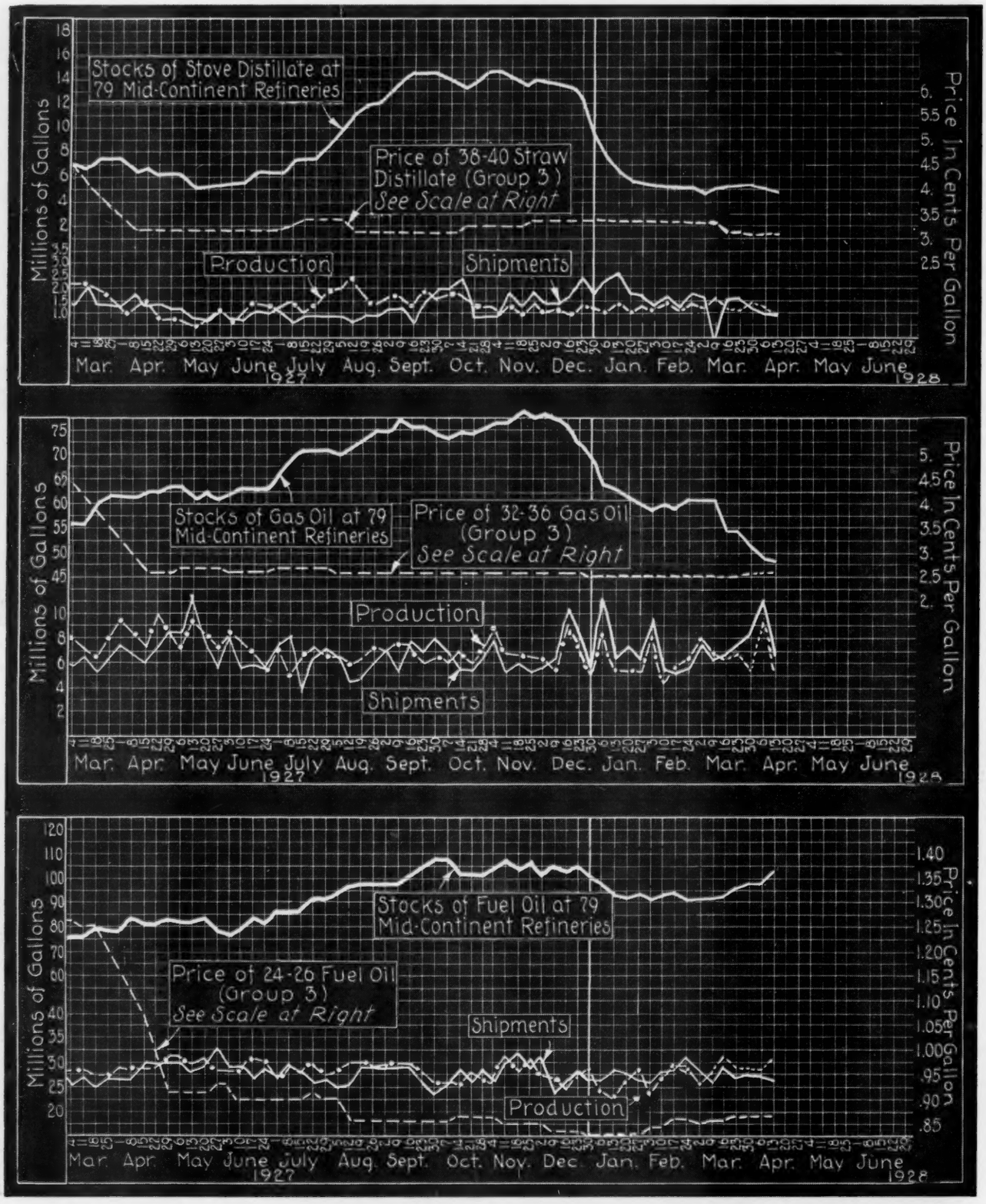

Price of 58-60-437 E.P. U.S. Motor Gasoline F.O.B. Group 3
35-35.9 Gravity Mid-Continent Crude (Prairie)
Cents Per Gallon
Gasoline Stocks at 79 Mid-Continent Refineries
Millions of Gallons
Production
Shipments
Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1927
1928

Prices shown above are extended to date shown in Refinery Market and Crude tables in Market section of this issue and stocks, shipments and Production are extended to date shown in table on opposite page

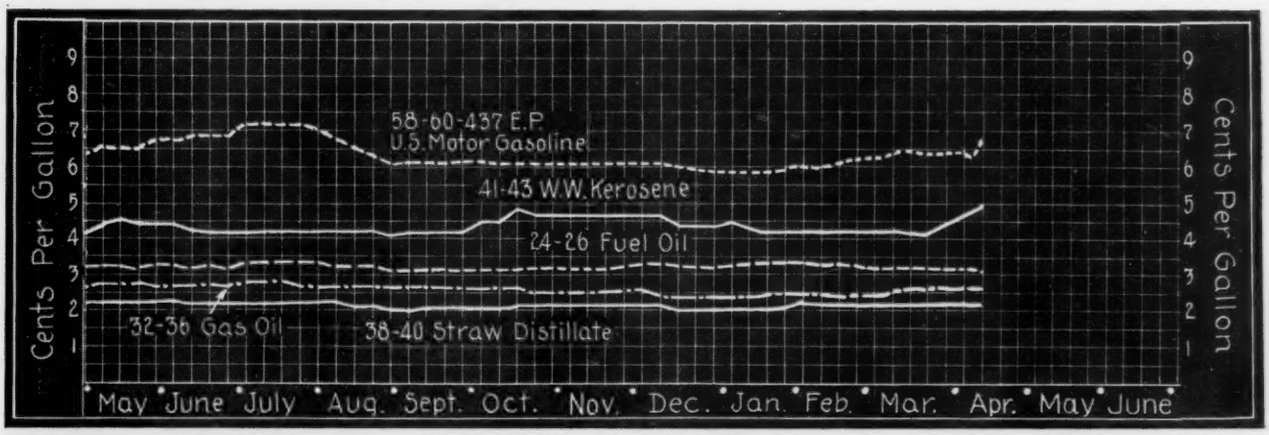

Kerosene Stocks at 79 Mid-Continent Refineries
Price of 41-43 W.W. (Group 3) See Scale at Right
Millions of Gallons
Price In Cent Per Gallon
Shipments
Production
Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1927
1928

Barometer of Mid-Continent Refinery Market—Week Ending April 13

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 79 Plants to National Petroleum News


Stocks of Stove Distillate at 79 Mid-Continent Refineries
Price of 38-40 Straw Distillate (Group 3) See Scale at Right
Production
Shipments
Millions of Gallons
Price In Cents Per Gallon
Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1927
1928
Stocks of Gas Oil at 79 Mid-Continent Refineries
Price of 32-36 Gas Oil (Group 3) See Scale at Right
Production
Shipments
Millions of Gallons
Price In Cents Per Gallon
Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1927
1928
Stocks of Fuel Oil at 79 Mid-Continent Refineries
Price of 24-26 Fuel Oil (Group 3) See Scale at Right
Shipments
Production
Millions of Gallons
Price In Cents Per Gallon
Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1927
1928

Current Prices of Principal Mid-Continent Refined Products


Cents Per Gallon
58-60-437 E.P. U.S. Motor Gasoline
41-43 W.W. Kerosene
24-26 Fuel Oil
32-36 Gas Oil
38-40 Straw Distillate
May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June

Prices shown are on Group 3 basis and extended to date shown in Refinery Market Tables Section of this Issue

the same plants ran 285,466 barrels of crude to stills a day, producing 34,894,000 gallons of gasoline and shipped 33,435,000 gallons. Stocks on April 15, 1927, totaled 101,739,000 gallons just 407,000 gallons more than present stocks. A year ago additions were made to stocks in the second and third weeks of April when weather was similar to present weather.

The Texas group was the only one to withdraw gasoline from storage last week when export demand caused refiners there to increase shipments nearly 500,000 gallons or 5.7 per cent to 8,349,000 gallons. Stocks in that area were lowered 800,000 gallons to 21,640,000 gallons.

Virtually all of the gasoline stock increase was reported by Oklahoma refiners whose stocks were built up 2,900,000 gallons when shipments fell 1,800,000 gallons to 15,781,000 gallons while production was being increased 2,900,000 gallons to 18,679,000 gallons because of a 7000-barrel increase in daily crude runs.

To meet the heavy spring demand for kerosene refiners throughout the field widened their cut of that product. Production was increased almost 1,000,000 gallons or 16.5 per cent to 6,887,000 gallons. Shipments fell 600,000 gallons to 6,655,000 gallons. Stocks were increased 250,000 gallons to 10,008,000 gallons. A year ago stocks of kerosene were increased 600,000 gallons to 15,330,000 gallons. Two years ago stocks were only 6,398,000 gallons.

Part of the increase in kerosene production was made at the expense of stove distillate. Production of that commodity was cut 200,000 gallons to 820,000 gallons. Stove distillate shipments continued to fall, reaching a new low for the year of 934,000 gallons. Stocks were cut to 4,899,000 gallons, 2,000,000 gallons less than stocks held a year ago.

Gas oil shipments continued well ahead of production. Stocks were reduced another million gallons to 47,851,000 gallons. A year ago gas oil stocks at the same plants totaled 65,115,000 gallons, 18,000,000 gallons above the present level. Refiners then were building up gas oil stocks by shutting down their cracking plants to await more favorable markets.

Shipments of fuel oil fell 2,000,000 gallons last week while production was being increased 2,250,000 gallons by the larger crude runs. Stocks April 13 totaled 102,121,000 gallons, an increase of 4,464,000 gallons.

92% of Natural Gasoline Plants Are Active

WASHINGTON, April 13.—A list of natural gasoline plants in the country compiled by the U. S. Bureau of Mines, indicates that there were 1155 in the United States as of Jan. 1 this year. Of these, 1060 plants, or 92 per cent, were in operation on Jan. 1; and 95, or 8 per cent, inactive.

A decrease in the number of operators, tending toward centralization in this industry as a cost-reducing factor, is reported by the Bureau of Mines. The latest figures the bureau gathered on operators is 1926, at the end of which year there were 390 natural gasoline manufacturers, compared with 450 at the end of 1925.

The plants on Jan. 1, 1928 had a total capacity of 8,048,000 gallons per day, of which 294,000 gallons were shut down.

Oklahoma is far in the lead in the number of plants, having 331, followed by California, Texas and Pennsylvania, with 159, 157 and 153 plants respectively. Oklahoma also is first in total capacity, followed by California and Texas. Oklahoma's capacity is 2,759,000 gallons daily; California's 2,182,000 gallons and Texas' 1,677,000 gallons.

The difference in size of plants as between the older producing districts and the more recent fields is illustrated by the fact that Pennsylvania, with 153 plants, has a total capacity of only 131,000 gallons compared with 157 plants of 1,677,000 gallons capacity in Texas.

The popularity of the absorption method of extracting natural gasoline is apparent; 526 plants with a total capacity of 5,476,000 gallons use the process, whereas 497 plants with a capacity of only 1,398,000 gallons, use the compression process. A combination of processes is used at 105 plants. Twenty-seven plants with capacity of 214,000 gallons, use the charcoal process.

Weighted Average Prices Oklahoma Market

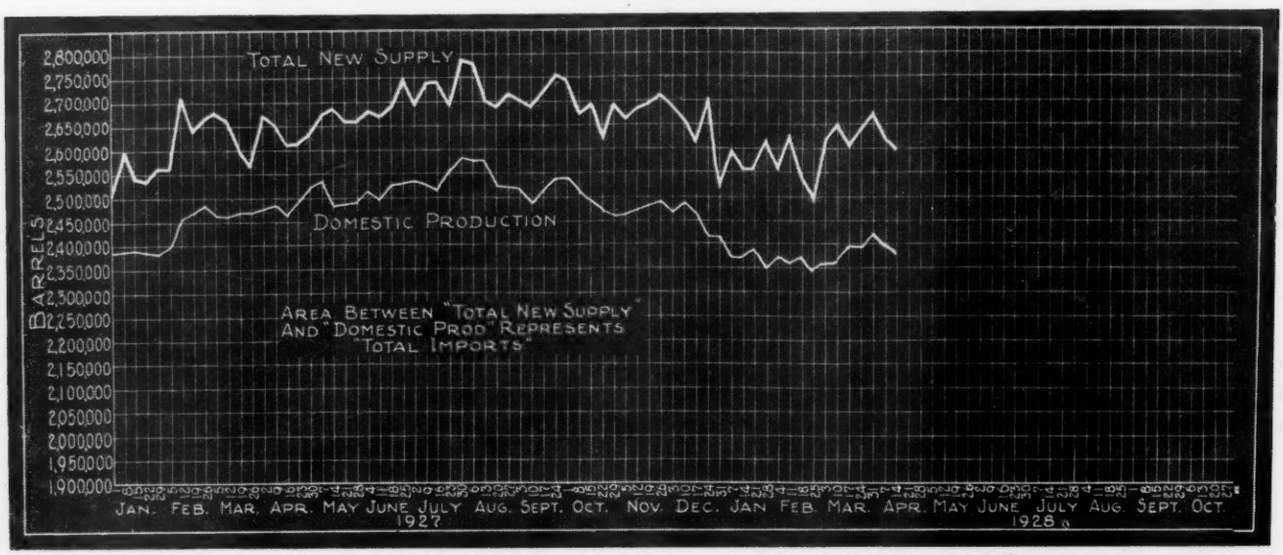
In line with National Petroleum News' new policy of carrying a weighted average price for the four more important Oklahoma gasolines in its market section, these weighted average prices, together with the number of cars of each grade sold, as of Monday, April 16, are published below. The figures are not available for publication in the refinery market table on page 106 of this issue.

	Total Cars	Weighted Average
58-60 U. S. Motor, 437 e. p.	72	6.8003
60-62, 437 e. p.	18	6.9444
60-62, 400 e. p.	37	6.9007
64-66, 375 e. p.	4	7.1563

Note: Above prices are in cents per gallon, f.o.b. Oklahoma refinery, in tank car lots.

TULSA, April 12.—Fred C. Mercer, formerly of Boudreau-Mercer, has become salesmanager for the Randolph Petroleum Co., Tulsa. Mr. Mercer moved to Tulsa several months ago from Wichita Falls, where he operated a marketing company for several years.

Daily Average Crude Oil Production and Imports



Daily average gross output of United States, by fields, for week ending with dates below as compiled by American Petroleum Institute

PRODUCTION SUMMARY

	April 14	April 7
Production east of Rockies	1,772,800	1,786,850
Decrease		14,050
Total production in U. S.	2,382,600	2,395,250
Decrease		12,650
Crude oil imports	217,143	227,143
Decrease		10,000
Total crude supply	2,599,743	2,622,393
Decrease		22,650

OKLAHOMA

	Apr. 14	Apr. 7
North Braman	2,750	2,950
South Braman	1,750	1,750
Blackwell	3,700	3,700
Hubbard	2,950	2,850
Thomas	1,400	1,350
Tonkawa	14,500	14,550
Garber	8,800	9,950
Burbank	38,550	39,350
Osage, outside Burbank	30,100	30,300
Watchorn	750	750
Cushing	20,900	21,000
Yale Jennings	8,700	8,700
Davenport	2,200	2,200
Bristow-Slick	24,400	24,500
North Okmulgee	15,500	15,600
Lyons-Deaner	7,100	7,150
Stroud	1,100	1,100
Cromwell	9,900	10,100
Papoose	4,950	5,100
Wewoka	7,650	7,800
Seminole	55,100	54,500
Bowlegs	75,700	76,800
Searight	16,750	17,150
Little River	40,550	40 900
Earlsboro	95,250	94,100
Duncan district	6,550	6,550
Graham	5,800	5,900
Fox	1,750	1,750
Healdton	14,050	14,000
Hewitt	8,700	8,700
Scholem Alechem	14,000	13,300
Others	82,950	83,350
Total, Oklahoma	624,800	627,750
Decrease		2,950

KANSAS

Greenwood County	29,800	29,900
Florence-Covert	1,400	1,400
Peabody-Elbing	3,700	3,700
Eldorado Towanda	14,100	14,150
Aususta-Fox-Bush	4,100	4,100
Rainbow Bend	1,700	1,800
Russell	2,900	2,850
Churchill	11,900	12,050
Oxford	17,750	19,300
Others	25,000	25,250
Total, Kansas	112,350	114,500
Decrease		2,150

NORTH LOUISIANA

Homer	4,450	4,400
Haynesville	6,350	6,200
Caddo, Light	10,500	10,500
Caddo, Heavy	3,800	3,950
De Soto, Red River	4,150	4,100
Elm Grove	550	550
Bellevue	1,100	1,100
Cotton Valley, light	5,550	6,250
Cotton Valley, heavy	4,450	.....
Urania	7,400	7,400
Pleasant Hill	550	600
Total, North Louisiana	48,850	45,050
Increase		3,800

ARKANSAS

El Dorado	5,350	5,400
Champagnolle	2,650	1,350
Smackover, light	8,200	8,250
Smackover, heavy	64,150	64,600
Stephens	1,050	1,100
Nevada	1,500	1,500
Lisbon	2,300	2,350
Others	100	150
Total, Arkansas	85,300	84,700
Increase		600

TEXAS (OUTSIDE GULF COAST)

Panhandle District

Hutchinson County	41,700	42,150
Carson County	7,100	7,050
Gray County	21,800	22,600
Wheeler County	900	1,100
Others	200	50
Total, Panhandle District	71,700	72,950
Decrease		1,250

North Texas

Burkburnett	12,850	13,000
Electra	11,350	11,600
Iowa Park and K-M-A	1,900	1,900
Wilbarger	9,200	9,300
Archer County	17,900	18,000
Montague-Cooke	11,600	11,750
Others	600	600
Total, North Texas	65,400	66,150
Decrease		750

West Central Texas

Stephens County	7,700	7,550
Eastland-Desdemona	7,800	8,000
Brown County	12,150	12,300
Coleman County	1,800	1,900
Callahan County	3,950	4,000
Shackleford County	9,300	9,100
Young County	7,950	8,000
Throckmorton County	1,000	1,000
Palo Pinto County	500	500
Jack County	1,500	1,400
Others	600	600
Total, West Central Texas	54,250	54,350
Decrease		100

West Texas

Jones County	1,350	1,300
Mitchell and Scurry Counties	3,200	3,300
Howard County	4,100	4,300
Reagan County	18,300	19,300
Crane and Upton Counties	76,750	79,000
Crockett County	2,300	3,100
Pecos County	50,600	49,000
Winkler County	203,150	208,250
Others	1,900	1,900
Total West Texas	361,650	369.450
Decrease		7,800

East Central Texas

Mexia	7,450	7,300
Currie	550	550
Richland	550	550
Wortham	2,100	1,900
Corsicana-Powell	11,900	11,600
Nigger Creek	1,350	1,150
Total, East Central Texas	23,900	23,050
Increase		850

Southwest Texas

Luling	13,300	13,250
Lytton Springs	1,400	1,450
Somerset	750	800
Laredo District	6,450	6,700
Piedras Pintas	.....	.....
Dale	1,250	1,400
Others	400	400
Total, Southwest Texas	23,550	24,000
Decrease		450
Total, Texas—(Outside Gulf Coast)	600,450	609,950
Decrease		9,500

GULF COAST

Coastal Texas

West Columbia	8,250	9,200
Damon Mound	850	850
Big Creek	1,600	1,600
Boling	2,200	2,350
Blue Ridge	5,750	6,150
Pierce Junction	12,400	13,000
Humble	1,200	1,250
Goose Creek	7,200	7,450
South Liberty	4,500	4,350
Hull	11,300	11,600
Saratoga	1,100	1,150
Batson	1,450	1,400
Barber's Hill	600	600
Sour Lake	3,450	3,500
Spindletop	36,000	36,100
Orange County	4,800	4,900
Others	1,500	1,600
Total, Coastal Texas	104,150	107,050
Decrease		2,950

Coastal Louisiana

Vinton	4,550	4,900
Lockport	4,600	4,200
Evangeline	1,100	1,050
East Hackberry	1,300	2,300
Edgerly	1,100	1,100
Others	2,300	2,800
Total, Coastal Louisiana	14,950	16,350
Decrease		1,400
Total Gulf Coast	119,100	123,400
Decrease		4,300

ROCKY MOUNTAIN

Wyoming

Salt Creek	36,150	37,900
Grass Creek	2,600	2,500
Elk Basin	1,000	1,050
Big Muddy	2,650	2,650
Lost Soldier	5,500	3,850
Rock Creek	2,500	2,650
Lance Creek	700	700
Teapot Dome	.....	.....
Others	3,950	3,950
Total, Wyoming	55,050	55,250
Decrease		200

Montana

Cat Creek	1,800	1,800
Sunburst	10,000	10,000
Others	150	150
Total Montana	11,950	11,950

Colorado

Moffat (Craig)	1,550	1,600
Fort Collins	2,800	3,050
Florence	1,200	1,300
Others	1,300	1,500
Total, Colorado	6,850	7,450
Decrease		600

New Mexico

Table Mesa	.....	250
Hogback	500	500
Artesia	1,150	1,150
Rattlesnake	250	250
Others	200	200
Total New Mexico	2,100	2,350
Decrease		250
Total, Rocky Mountain	75,950	77,000
Decrease		1,050

CALIFORNIA

Santa Fe Springs	37,000	37,500
Long Beach	149,000	138,000
Huntington Beach	56,000	56,000
Torrance	18,500	18,500
Dominguaze	12,500	12,500
Rosecrans	6,800	7,000
Inglewood	29.500	29,500
Midway-Sunset	73,500	76,000
Ventura Avenue	52,500	51,500
Seal Beach	39,500	40,000
Others	135,000	141,900
Total California	609,800	608,400
Increase		1,400

EASTERN

(Including Ill., Ind., Ky., Ohio, W. Va., Pa., and N. Y.)	106,000	104,500
Increase		1,500

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It is self-closing and leak-proof
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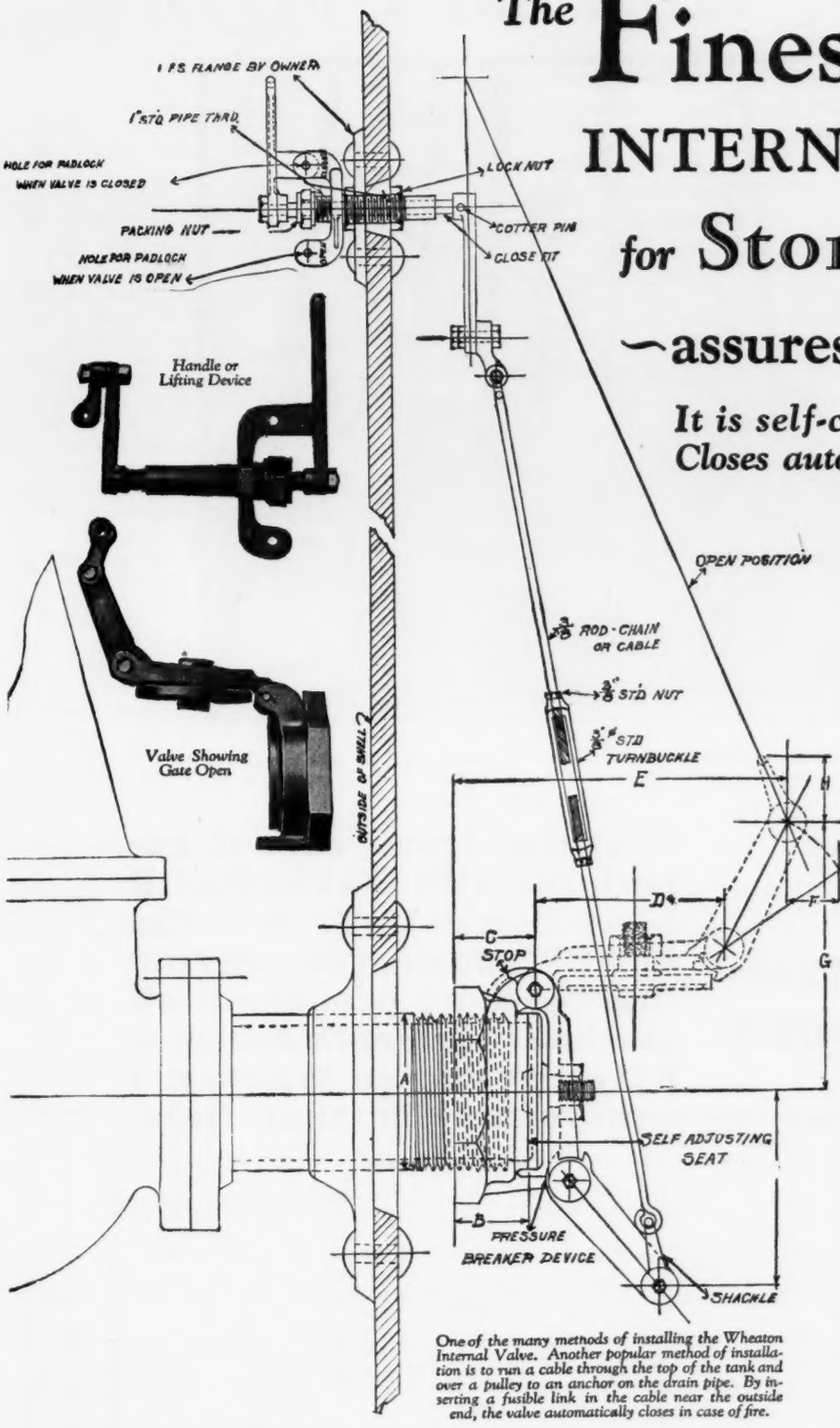

One of the many methods of installing the Wheaton Internal Valve. Another popular method of installation is to run a cable through the top of the tank and over a pulley to an anchor on the drain pipe. By inserting a fusible link in the cable near the outside end, the valve automatically closes in case of fire.

THIS Wheaton Internal Valve represents the most advanced development in safety valve design and manufacture. It is absolutely dependable.

As is obvious from the accompanying illustrations, the flow of the liquid closes the valve gate when released; and the perfectly true smooth surface of the rim of the gate, closing against the equally true smooth surface of the flange of the body, makes a leak-proof seal. In opening the valve the seal is "broken" by the cam-like pressure breaker—no sticking, no stress, no strain, no friction.

The drawing at the left shows one of the many methods of installation. The Wheaton Internal Valve can be used on any tank of any height, and in any position or angle desired—vertically, horizontally or obliquely. And the handle device can be located at any height on the wall of the tank or on the top.

By use of a fusible link fitting, the Valve closes automatically in case of fire near the tank. This gives further protection for users of Wheaton Internal Valves.

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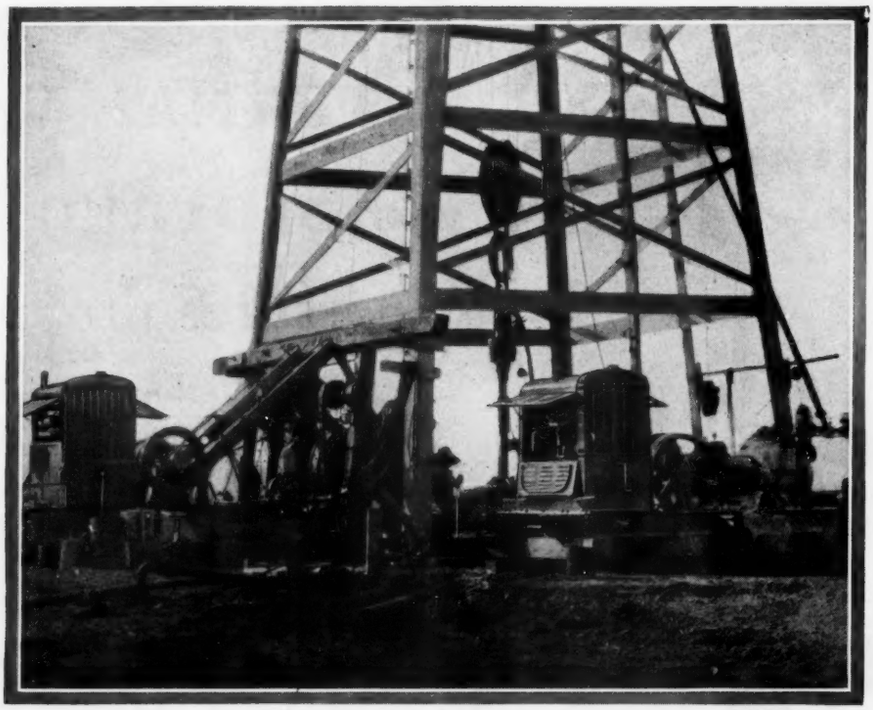

p-816-L

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P-825-L

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First of Little River Joint Tests Is Completed as Failure

By Lawrence E. Smith
N. P. N. STAFF WRITER

TULSA, April 14

MID-CONTINENT operations the past week featured two prominent tests, both completed as failures in the Wilcox sand. Both are in the Seminole district, now and for a long while the center of production affairs of the Mid-Continent.

One of the failures possesses interest because it is one of the 10 test wells drilled in Twp. 7-6E, south of the Little River field, Seminole county.

These tests were drilled by agreement with all lease owners in the area. Owners of offset acreage to each of the tests pledged themselves to pay $10,000 each toward drilling the well in the event it failed to find paying production.

Prairie Oil & Gas Co. drilled its No. 1 Hudson, one of the key test wells, into water in the Wilcox April 13. It is in the SW SE SE of 12-7-6.* It found top of the Wilcox at 4215 feet and total depth was 4220 feet. The Viola lime was stopped at 4116 feet and at 4210 feet a light show of oil was found.

The extraordinarily fast time of 41 days from spudding into completion was made on this well. That means that more than 100 feet were drilled each day of the total time, but the actual drilling time was cut down to much less by time spent in cementing pipe and changing from rotary to standard tools. Meade & Phillips, the contractors, kept "turning 'round" every minute of drilling time. In figuring drilling time on wells in this district about 50 days is considered the minimum.

Several more of the remaining 9 wells of the test group and some of the offsets to the well of Snowden & McSweeney, in Sec. 13, of the same township, and the well of the Independent Oil & Gas Co. in Sec. 23, will be completed in the next two weeks.

These two producing wells are wildcats and, for several weeks, were shut in to 100 barrels per day. On March 1, by agreement, they were opened to full production and will continue to be produced at capacity until the first offset comes in, when production of both the discovery and the offset will be cut to 50 barrels daily each. The Snowden & McSweeney well is making around 2700 barrels and the Independent well about 2500 barrels daily.

The other outstanding failure of the week was the test of the Amerada Petroleum Corp. in the SW SE NE of 1-8-4E, Pottawatomie county. It topped the Wilcox at 4478 feet and was drilled to 4485 feet, getting water only. It will be plugged back to the Hunton lime, 4110 to 4190 feet, from which the well has been producing around 80 barrels daily between casing strings.

The well is important as having a bearing on the general territory centering around Twp. 8-5E, which contains one Wilcox producing well. This well, drilled by the Barnsdall Oil & Gas Co., was completed in December and has since been produced at 50 barrels daily. It is in 14-8-5.

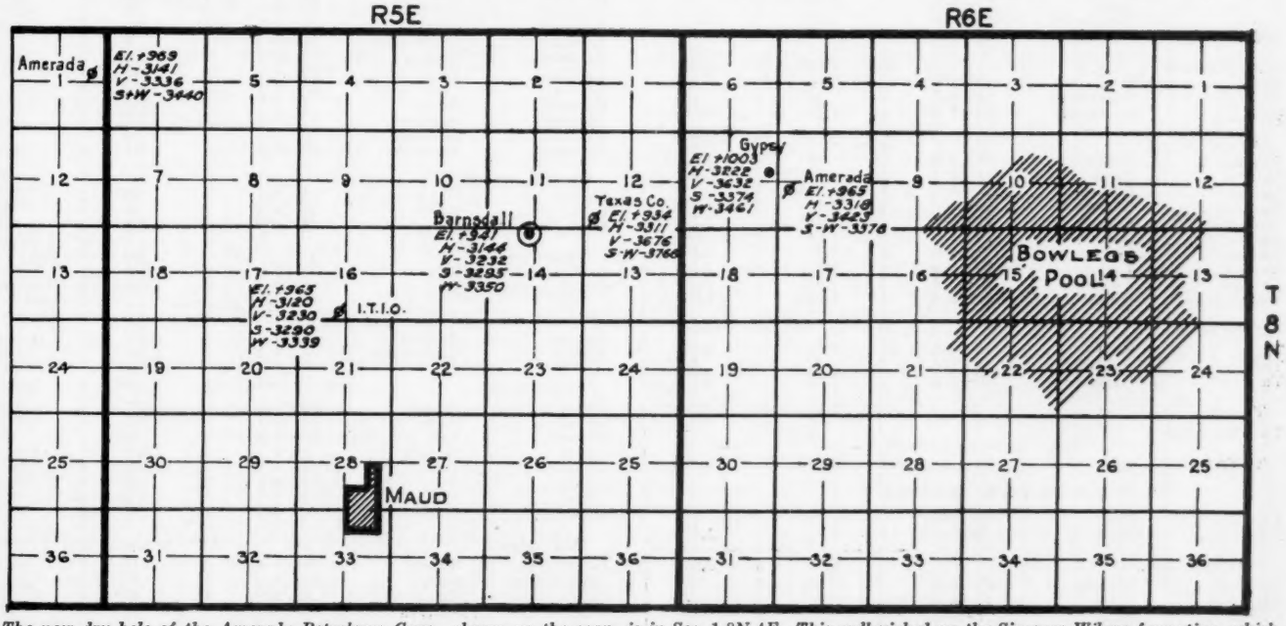
Since then the Indian Territory Illuminating Oil Co. has drilled a Wilcox failure—making small production in the Simpson—in Sec. 16 and The Texas Co. got a failure in Sec. 12. The Barnsdall well is rated at 2000-3000 barrels daily. About two and a half miles northeast, the Gypsy Oil Co.'s Doser well marks another shut in pool. This well was making better than 3000 barrels when the company pinched it to 50 barrels per day. It is offset by a dry hole in the Wilcox.

While the Amerada's failure in 1-8-4 is about five miles from the Barnsdall well and, therefore, is not a limiting test in the same sense as the failures of the I.T.I.O. and The Texas Co., it does form a significant outpost which will encourage setting up a joint testing arrangement of the area similar to the one being pursued south of the Little River field.

The shut in arrangement on both the Barnsdall and the Gypsy wells, which are shown on the accompanying map, expires May 1. Umpire Collins called

(*Continued on Page* 46)

*Map showing location of this and other test wells was published on page 26, March 7, 1928 issue of NATIONAL PETROLEUM NEWS.



The new dry hole of the Amerada Petroleum Corp., shown on the map, is in Sec. 1-8N-4E. This well picked up the Simpson-Wilcox formation, which carried water, 90 feet lower than the Barnsdall producer in Sec. 14-8-5. Abbreviations on the map indicate elevation, Hunton Lime, Viola Lime, Simpson, and Wilcox. Depths given for these formations are corrected to subsea levels

Seminole District Production by Companies and Leases, April 11 and April 4, 1928

BOWLEGS

Company	Farm	S.T.R.	Apr. 11 Wells	Apr. 11 Prod.	Apr. 4th Wells	Apr. 4th Prod.
Amerada	Rascoe	15– 8–6	8	1,935	8	1,995
Atlantic	Baker	1– 8–6	4	260	4	205
Atlantic	Fleet	23– 8–6	3	285	4	460
Atlantic	Grayson	21– 8–6	4	690	4	649
Atlantic	A. Jones	10– 8–6	3	85	3	80
Atlantic	C. Jones	9– 8–6	2	115	2	102
Total Atlantic			16	1,435	17	1,496
Barnsdall	McNac	28– 8–6	1	25	1	28
Barnsdall	Murrow	11– 8–6	4	510	4	840
Total Barnsdall			5	535	5	868
Carter	Bowlegs	15– 8–6	4	1,370	4	1,375
Carter	Burden	23– 8–6	3	260	3	260
Carter	Harjoche	15– 8–6	6	550	6	600
Carter	Hilly	23– 8–6	3	890	3	845
Carter	Jones	11– 8–6	4	1,370	4	1,375
Carter	McGeisey	21– 8–6	1	30	1	0
Carter	Melisse	9– 8–6	1	145	1	125
Carter	Walker	15– 8–6	4	625	4	620
Carter	Wise	23– 8–6	12	3,080	12	3,240
Total Carter			39	8,320	38	8,440
Empire	Lacey	15– 8–6	6	460	5	525
Empire	Wise	23– 8–6	2	365	2	412
Total Empire			8	815	8	937
Gypsy	Bowlegs	22– 8–6	1	155	1	195
Gypsy	Bradley	8– 8–6	1	2	1	2
Gypsy	Cumsey	8– 8–6	4	1,362	4	1,420
Gypsy	Dosar	7– 8–6	1	100	1	100
Gypsy	Grayson	13– 8–6	4	800	4	845
Gypsy	Harjoche	10– 8–6	2	2,920	2	3,257
Gypsy	Jones	11– 8–6	1	275	1	275
Gypsy	Walker	15– 8–6	8	1,830	8	1,877
Gypsy	Wise	23– 8–6	3	250	3	302
Total Gypsy			25	7,694	25	8,273
I. T. I. O.	Barnett	23– 8–6	2	366	2	344
I. T. I. O.	Barnett-B	24– 8–6	1	231	1	231
I. T. I. O.	Billington	22– 8–6	5	807	5	785
I. T. I. O.	Bowlegs	22– 8–6	10	1,794	10	1,410
I. T. I. O.	Davis	13– 8–6	4	1,232	4	1,302
I. T. I. O.	Fay	18– 8–6	9	2,130	9	2,222
I. T. I. O.	Goforth	15– 8–6	12	1,525	12	1,786
I. T. I. O.	Livingston	15– 8–6	11	3,487	11	3,485
I. T. I. O.	Lizzie	11– 8–6	2	425	2	452
I. T. I. O.	Walker	15– 8–6	8	915	8	909
I. T. I. O.	Wilmott	15– 8–6	4	436	4	382
I. T. I. O.	Work	23– 8–6	1	134	1	134
I. T. I. O.	Youngblood	22– 8–6	2	0	2	27
Total I. T. I. O.			73	13,482	73	12,965
McCullough	Bowlegs	22– 8–6	2	420	2	400
Magnolia	Davis	13– 8–6	3	530	3	534
Magnolia	Davis-M	13– 8–6	1	284	1	262
Magnolia	Hammond	10– 8–6	3	678	3	660
Magnolia	Rhodes	10– 8–6	3	4,434	3	4,552
Magnolia	Van Buskirk	9– 8–6	1	245	1	331
Total Magnolia			11	6,171	11	6,339
Mid-Continent	Baker	10– 8–6	4	1,372	4	1,428
Mid-Continent	Bowlegs	22– 8–6	1	55	1	30
Mid-Continent	Smith	12– 8–6	6	580	6	605
Total Mid-Continent			11	2,007	11	2,063
Minnehoma	Bowlegs	15– 8–6	4	380	4	350
Prairie	Gahagan	23– 8–6	4	485	4	295
Prairie	Harber	10– 8–6	8	2,940	8	2,945
Prairie	Jones	11– 8–6	4	160	4	140
Prairie	Templeton	12– 8–6	6	3,055	6	3,010
Prairie	Whitney	23– 8–6	4	380	4	570
Total Prairie			26	7,020	26	6,960
Pure	Reed	14– 8–6	15	2,685	15	2,647
Pure	Strother-D	14– 8–6	4	447	4	551
Pure	Strother-F	10– 8–6	4	1,395	4	1,380
Total Pure			23	4,527	23	4,517
Roxana	Taylor	16– 8–6	5	543	5	612
Shaffer	Lacey	14– 8–6	3	362	3	310
Sinclair	Bowlegs	22– 8–6	1	65	1	85
Sinclair	Cumsey	10– 8–6	4	3,853	4	4,218
Sinclair	Ellen	11– 8–6	7	1,345	7	1,196
Sinclair	Harjo	14– 8–6	3	645	3	645
Sinclair	Jones	8– 8–6	6	3,365	6	3,450
Sinclair	Taylor	10– 8–6	4	2,421	4	2,541
Sinclair	Taylor-W	10– 8–6	1	1,032	1	1,099
Sinclair	Walker	22– 8–6	4	1,048	4	1,013
Total Sinclair			30	13,774	30	14,247
Texas	Reed	14– 8–6	11	2,656	11	2,865
Tidal	Grayson	13– 8–6	4	610	4	620
Tidal	Harjoche	10– 8–6	6	1,745	6	1,775
Total Tidal			10	2,355	10	2,395
Twin State Jones			3	65	3	95
TOTAL BOWLEGS			312	74,506	311	76,452

LITTLE RIVER

Amerada et al	Fore	35– 8–6	2	810	2	820
Amerada	Nitey	2– 7–6	3	2,755	3	2,830
Total Amerada			5	3,565	5	3,650
Barnsdall	Hotulke	22– 8–6	1	40	1	40
Blackwell	Nitey	35– 8–6	6	2,067	6	2,437
Carter	Fish	1– 7–6	6	1,570	6	1,490
Carter	Jackson	11– 8–6	1	880	1	775
Total Carter			7	2,450	7	2,265
Continental	Cosar	2– 7–6	3	1,970	4	2,195
Gypsy	Brown	33– 8–6	1	50	1	50
Gypsy	Campbell	35– 8–6	2	210	2	187
Gypsy	Nungee	35– 8–6	1	37	1	40
Gypsy	Pottey	36– 8–6	3	132	3	352
Total Gypsy			7	429	7	629
Independent	Harris	23– 7–6	1	2,595	1	2,672
Independent	Davis	2– 7–6	3	3,535	3	2,570
Total Independent			4	6,130	4	5,242
I. T. I. O.	Campbell	1– 7–6	1	98	1	93
I. T. I. O.	Dungan	35– 8–6	3	1,781	3	2,394
I. T. I. O.	House	1– 7–6	1	160	1	201
I. T. I. O.	House-AW	1– 7–6	1	65	1	65
I. T. I. O.	House-BW	2– 7–6	4	2,615	4	2,658
I. T. I. O.	Hull	26– 8–6	1	70	1	65
I. T. I. O.	Jackson	1– 7–6	3	1,996	3	1,948
I. T. I. O.	McCulla	1– 7–6	3	710	3	860
I. T. I. O.	Nitey	2– 7–6	7	1,254	7	1,307
I. T. I. O.	Phoebe	35– 8–6	3	794	3	818
I. T. I. O.	Phoebe-B	36– 8–6	4	317	4	311
I. T. I. O.	Reed	1– 7–6	1	67	1	87
I. T. I. O.	Sotkneche	1– 7–6	4	865	5	913
Total I. T. I. O.			36	10,792	37	11,756
Magnolia	Cruse	2– 7–6	1	375	1	420
Magnolia	Dixon	31– 8–6	1	20	1	0
Magnolia	Pottey	34– 8–6	4	802	3	793
Total Magnolia			6	1,197	5	1,213
Mid-Cont.	Smith	12– 8–6	1	30	1	35
Mid-Cont.	Wadsworth	26– 8–6	7	1,065	8	980
Total Mid-Continent			8	1,095	9	1,015
Pine et al	Pottey	35– 8–6	2	522	2	717
Pine W. B.	Hoyecha	26– 8–6	1	1,005	1	785
Total Pine			3	1,527	3	1,502
P & R	Chilcoat	25– 8–6	1	1,075	1	1,030
P & R	Dungan	36– 8–6	2	60	2	50
P & R	House	2– 7–6	4	1,685	4	1,700
Total P & R			7	2,820	7	2,780
Roxana	Smith	1– 7–6	1	8	1	8
Shaffer	Narcome	36– 8–6	1	95	1	95
Sinclair	Cosar	36– 8–6	2	1,400	2	1,295
Snowden	Tiger	13– 8–6	1	2,770	1	2,845
Superior	Sotkneche	1– 7–6	1	16	1	16
Texas	Coker	1– 7–6	3	620	3	690
Tidal	House	1– 7–6	3	950	3	915
Tidal	Johnson	1– 7–6	1	40	1	60
Total Tidal			4	990	4	975
TOTAL LITTLE RIVER			107	39,981	107	40,648

EARLSBORO

Amerada	Anderson	15– 9–5	2	1,150	2	1,195
Amerada	Cowden	4– 9–5	8	1,615	8	1,855
Amerada	Rogers	3– 9–5	2	185	2	895
Total Amerada			12	3,797	12	3,490
Atlantic et al	Foreman	18– 9–5	1	185	1	189
Barnsdall	Brown	10– 9–5	4	2,340	4	2,030
Barnsdall	Bruner	2– 9–5	2	824	2	786
Barnsdall	Bruner-M	11– 9–5	4	1,510	4	1,594
Barnsdall	Cudjo	11– 9–5	1	27	1	26
Barnsdall	Davis	11– 9–5	3	585	3	540
Barnsdall	Davis-J	11– 9–5	4	800	4	670
Barnsdall	Davis-M	11– 9–5	3	100	3	100
Barnsdall	Gibson	9– 9–5	8	3,235	8	3,062
Barnsdall	Hearn	15– 9–5	1	4	1	4
Barnsdall	Ingram	4– 9–5	8	2,686	8	2,482
Barnsdall	Pack	10– 9–5	4	243	4	246
Barnsdall	Peter	10– 9–5	4	337	4	345
Barnsdall	Sango	2– 9–5	3	6,335	3	6,599
Barnsdall	Sebolka	15– 9–5	1	595	1	629
Barnsdall	Sullivan	10– 9–5	3	58	3	82
Barnsdall	Watsutke	12– 9–5	4	1,814	4	2,042
Total Barnsdall			57	21,493	57	21,237
Carter	Davis	13– 9–5	2	580	2	575
Carter	Payne	12– 9–5	3	40	3	75
Carter	Sango	2– 9–5	4	2,090	4	2,195
Total Carter			9	2,710	9	2,845
Continental	Kays	2– 9–5	2	100	2	145
Continental	Spencer	12– 9–5	4	1,100	4	1,100
Total Continental			6	1,200	6	1,245
Empire	Barker	12– 9–5	1	1,030	1	1,050
Empire	Edmundson	3– 9–5	3	1,130	3	1,148
Total Empire			4	2,160	4	2,198
Gypsy	Bruner	10– 9–5	4	3,075	4	3,012
Gypsy	Carter	11– 9–5	9	3,780	9	3,495
Gypsy	Earl	16– 9–5	1	20	1	17
Gypsy	Hunick	5– 9–5	1	2,460	1	2,290
Gypsy	Noble	12– 9–5	4	3,580	4	3,005
Gypsy	Peter	10– 9–5	3	265	3	195
Gypsy	Sango	1– 9–5	5	4,352	5	4,487
Gypsy	State	16– 9–5	4	1,132	4	855
Total Gypsy			32	18,604	32	17,356
Independent	Bruner	10– 9–5	4	357	4	360
Independent	Gaines	11– 9–5	4	1,170	4	1,125
Independent	Knapp	8– 9–5	4	2,183	4	2,022
Independent	Sullivan	10– 9–5	3	52	3	17
Total Independent			15	3,762	15	3,524

(*Continued on Page 43*)

Seminole District Production by Companies and Leases, April 11 and April 4, 1928

(*Continued from Page 42*)

Company	Farm	S.T.R.	Apr. 11 Wells	Apr. 11 Prod.	Apr. 4th Wells	Apr. 4th Prod.
Magnolia	Bryant	9- 9-5	6	1,510	6	1,272
Magnolia	Cowden	4- 9-5	4	80	4	80
Magnolia	Edmundson	3- 9-5	3	30	3	30
Magnolia	Holmsley	11- 9-5	8	2,370	8	2,247
Magnolia	Hyde	13- 9-5	1	921		
Magnolia	Ingram	10- 9-5	1	30	1	30
Magnolia	Lena	10- 9-5	3	80	3	80
Magnolia	Seay	12- 9-5	9	3,980	9	4,062
Magnolia	Simpson	10- 9-5	3	300	3	404
Magnolia	Sparks	11- 9-5	7	650	7	785
Magnolia	Sullivan	12- 9-5	3	130	3	111
Total Magnolia			48	10,081	48	9,101
Mid-Continent	McCumber	9- 9-5	7	410	7	395
Mid-Kansas	Anderson	14- 9-5	3	95	3	135
Phillips	Dunnaway	15- 9-5	1	0	1	30
Phillips	Graham	9- 9-5	4	172	4	185
Total Phillips			5	172	5	215
Prairie	Baker	23- 9-5	1	50	1	50
Prairie	Davis	13- 9-5	5	3,790	5	3,765
Prairie	Graham	3- 9-5	2	35	2	25
Prairie	Graham-O	10- 9-5	4	1,930	4	1,385
Prairie	Stidham	11- 9-5	13	4,635	13	4,420
Total Prairie			25	10,440	25	9,646
Roxana	Bayliss	17- 9-5	1	0	1	13
Roxana	Spencer	12- 9-5	2	1,470	2	1,600
Total Roxana			3	1,470	3	1,613
Shaffer	Clark	1- 9-5	6	801	6	1,022
Sinclair	Foreman	18- 9-5	1	15	1	15
Sinclair	Hollins	12- 9-5	3	80	2	130
Sinclair	Sango	2- 9-5	2	4,990	3	4,605
Total Sinclair			6	5,085	6	4,750
Skelly	Spencer	12- 9-5	1	588	1	652
Texas	Anderson	2- 9-5	6	865	6	470
Texas	Rodgers	5- 9-5	4	3,755	4	3,710
Texas	Wilmott	10- 9-5	7	1,552	7	2,160
Total Texas			25	8,147	25	8,365
Tidal	Watkins	9- 9-5	8	3,235	8	3,165
Twin State	Barker	12- 9-5	4	100	4	100
Twin State	Hearn	2- 9-5	4	1,905	4	2,120
Total Twin State			8	2,005	8	2,220
TOTAL EARLSBORO			285	96,438	284	93,821

SUMMARY

TOTAL LITTLE RIVER	**107**	**39,981**	**107**	**40,648**
TOTAL SEARIGHT	**70**	**17,021**	**70**	**17,053**
TOTAL BOWLEGS	**312**	**74,506**	**311**	**76,452**
TOTAL SEMINOLE	**309**	**55,837**	**309**	**55,099**
TOTAL SEMINOLE AREA	**1,083**	**283,783**	**1,081**	**283,073**
Avg. Per Well			**262**	**262**

Completions in Oklahoma and Kansas, Week Ended April 14, 1928

OKLAHOMA

Carter County

Company	Well No.	Location	Depth	Init. Prod.
Schermerhorn et al	2	SEc NE 22-1-3 W	2419-2664	90
Magnolia	2	NEc SE SW 33-1-3 W	3651-3942	50
Magnolia	2	SWc NE 11-2-3 W	3540-3726	55

Creek County

Markham	1	NEc 19-17-7 E	2794-2809	318
Prairie	1	NWc NW SE 26-18-7 E	2938-2987	10.17M
Hull	3	SEc SW SW 21-18-9 E	2566-2568	4M
Roach et al	1	SWc NE 35-18-9 E	2761-2775	15
Steinberger et al	1	C NW SE 19-19-8 E	T.D. 3326	Dry
Olean	1	SEc NW 10-15-8 E	T.D. 3837	Dry
Smith et al	5	NWc SE 4-17-11 E	T.D. 1554	Dry

Grady County

Nicholos et al	1	CNL SE NW 25-5-8 W	T.D. 3206	Dry
Hall	1	SWc NW 12-4-8 W	T.D. 3345	Dry
Okla. Nat'l	4	NEc SE NE 27-5-8 W	2002-2170	30M

Hughes County

I. T. I. O.	1	NW NW SE SW 8-5-8 E	2441-2671	405
Slick	1	SWc SE NE 8-5-8 E	2475-2506	45

Jefferson County

Heydrick et al	1	NWc SW SW 24-6-6 W	1728-1731	230

Kay County

Wilson	1	CEL W½ SW SE 20-29-1 E	1460-1464	2M
Rogers et al	1	C NW 33-27-1 W	802-835	.4M
Martin et al	1	SEc SW 4-27-1 E	739-755	5.29M
Wentz	1	SWc NW NW 8-27-2 E	T.D. 556	Dry
Rogers et al	1	C NE NE 5-26-1 W	T.D. 850	Dry

Lincoln County

Wilcox	1	NEc 15-15-5 E	3614-3624	2½M

Muskogee County

Ford	5	SWc NW SE 6-14-19 E	503-528	44
Lowerre	1	SWc SE NE SW 6-14-19 E	510-528	120
Powell	1	CSL SE NE SW 6-14-19 E	507-523	50
Sells	1	SEc NE SW 6-12-19 E	514-535	72
Simpson et al	1	C SE NE SW 6-14-19 E	502-526	¾M
Jolly Ogg	1	NEc SE NE 21-15-15 E	T.D. 2135	Dry
Vise-Heflin	2	SWc NW 30-15-15 E	T.D. 1360	Dry
Denton-Marshall	3	NEc SE 32-15-15 E	T.D. 2067	Dry
Lovelace et al	1	SEc NE SE 1-14-18 E	T.D. 939	Dry
Lovelace et al	2	CEL SW NW 2-14-18 E	T.D. 1220	Dry
Meek et al	1	CSL SW SE NW 6-14-19 E	T.D. 558	Dry
Ragland-Curly	1	NEc SE NE SW 6-14-19 E	T.D. 525	Dry
Simpson	2	NWc SE NE SW 6-14-19 E	T.D. 516	Dry

Okfuskee County

Prairie	1	SWc SW 19-11-7 E	T.D. 4831	Dry

Okmulgee County

Speary et al	1	NWc SW 7-14-15 E	T.D. 731	Dry
Hersha-Delaney	1	SWc NW 35-16-14 E	1825-1835	7M
Wheeler et al	3	SWc NE NE 36-14-12 E	1222-1240	½M
Elm	10	SEc 13-14-14 E	1078-1136	10
Selby	16	NWc SE NE 26-14-14 E	950-960	2
Okland Drlg	1	SWc NE SW NW 21-14-15 E	1196-1210	½M

Osage County

Peters	10	SWc NE SE NW 17-27-6 E	2912-2976	158
Kewanee	9	SEc NW NE 28-27-6 E	2893-2975	660
Carter	8	NWc SE SE 3-26-6 E	2734-2795	170
Prairie	1	SEc NE 11-24-6 E	2690-2694	10
Prairie	4	SWc SE SW 21-27-6 E	2867-2948	500
I. T. I. O.	388	NWc SE 13-26-10 E	T.D. 2210	Dry

Pawnee County

Company	Well No.	Location	Depth	Init. Prod.
Turner et al	1	SEc NE 30-20-9 E	1098-1122	21

Payne County

Magnolia	1	SWc NW 10-18-5 E	2094-2139	2½M

Pottawatomie County

Magnolia	1	SW NE 36-7-3 E	4210-4325	7

Pontotoc County

La Salle et al	3	CNL N½ SW 28-5-5 E	2230-2595	65
Gillett et al	2	NW SW SW 25-5-6 E	1983-1984	8M
Gillespie et al	1	SW SE 12-5-4 E	2043-2570	50
Westheimer-Daube	2	SEc 8-5-8 E	793-811	8
Homaokla	9	NEc 17-5-8 E	2755-2769	200
Homaokla	2	NEc SE 19-5-8 E	2530-2596	10
Louisiana	10	NWc 20-5-8 E	2523-2699	3M
Ada Cemt	1	C SW NW 24-4-7 E	1790-1792	60
Winkler et al	1	NE SE NE 17-5-8 E	T.D. 2963	Dry
Tidal	5	CWL NW NW 27-5-8 E	T.D. 935	Dry
Tidal	6	NWc 27-5-8 E	T.D. 990	Dry

Seminole County

Pure	1	NW NE 15-9-7 E	T.D. 3516	Dry
I. T. I. O.	1	NW SW 32-7-7 E	T.D. 4824	Dry
Continental	4	SW NE NW 36-8-6 E	4232-4241	600
Indep.-White Eagle	3	SE SW SE 2-7-6 E	4248-4264	910

Stephens County

Snodgrass	5	NEc SE NE NW 34-1-8 W	1667-1692	125
Pace et al	1	SEc NE 12-2-8 W	1548-1554	200
American	1	SWc NW 7-2-7 W	1531-1554	230
Franklin	1	SEc NE SE 12-1-4 W	T.D. 4318	Dry
Magnolia	1	SEc NE NE 23-1-4 W	T.D. 4010	Dry

Tulsa County

Caldwell-Page	1	SWc SE SE 10-19-11 E	T.D. 1854	Dry
Mid-Co	1	NEc NW NW 24-18-13 E	1542-1584	10
McGuigan	2	SWc SE SE 24-18-14 E	1275-1305	35

KANSAS

Butler County

Garden et al	1	SEc SW NE 6-27-6 E	2690-2712	200

Cowley County

Elliott et al	1	SWc SE NE 17-31-5 E	530-545	½M
Slick et al	3	Lot-2, Blk-1, 22-32-4 E	2912-2952	OWD 4M

Greenwood County

Theta	7	SEc NW SE SE 23-22-12 E	1640-1711	100
Empire	2	NEc NW SW 30-22-13 E	1752-1772	90
Empire	3	NWc NE SW 30-22-13 E	1751-1785	100
Simmons-Rhodes	2	NWc SE SE 30-22-13 E	1706-1718	25
Kanson	4	SEc NE SW 6-24-11 E	1830-1845	15

Marion County

Skow et al	1	NE SE 20-18-4 E	T.D. 2408	Dry
Loomis et al	1	SEc NE NW 15-17-4 E	2332-2384	200

Sumner County

Roxana	3	C E½ SW SW 14-32-2 E	1995-2106	2100
Wasson et al	8	C W½ SE SW 14-32-2 E	1979-2101	950
Palmer et al	4	NEc NW NW 23-32-2 E	1987-2110	1500
Prairie	3	SWc NW NE 3-35-2 E	3408-3450	167

Wilson County

Scott et al	1	NEc SE NW 10-28-14 E	960-988	35

Woodson County

Fees et al	1	NEc SW 8-24-15 E	T.D. 1421	Dry

Completions in N. E. Central, West, Panhandle and North Texas, Week Ended April 14, 1928

NORTH & EAST CENTRAL

Brown County

Company	Well Farm	Location Survey	Depth	Init. Prod.
Humble	1-Allen	Delago	1400-1504	1½M
Cranfill-Reynolds	1-Eubanks	Mitchell	1210-1225	757
Jaw Hawk	4-Boyson	Williams	1209-1223	40
Pandem	8-Hutton	Nobles	1111-1119	60
Richards	5-Curry	Betts	1108-1119	50
Henshaw	5-Bush	Kenney	1105-1114	15
Gilman-McMurray	1-Hickman	Benson	T.D. 1274	Dry
Daniels et al	1-Alvis	H&TB	T.D. 1542	Dry
Mitcham	1-Brooks	Sparks	T.D. 1197	Dry

Callahan County

Turley	1-Diller Bros.	LAL	573-586	5
Turley	2-Diller Bros.	LAL	582-592	5
Swobeland et al	1-Shackleford	D&DA	T.D. 640	Dry

Coleman County

Pitts et al	1-Burns	White	T.D. 1605	Dry
Texas	1-Smith	GH&H	T.D. 2470	Dry

Eastland County

Texas	1-Turner	H&TC	T.D. 1535	Dry

Limestone County

Dillon-Hammond	1-Fenner	Hoskins	T.D. 2931	Dry

Shackleford County

Phillips	2-Wetty	BAL	T.D. 4360	Dry

Taylor County

Owens-Sloan	1-Latimer	SP	T.D. 2975	Dry
Brown Prod.	1-Henslee	....	T.D. 2985	Dry

Young County

Paull	1-Eddleman	TE&L	1804-1810	25

NORTH TEXAS

Archer County

Cullum	1-Mankins	SP	660-665	8
Bridwell	1-Wilson	Geraldine	1573-1584	240
Fain-McGaha et al.	5-Wilson	Geraldine	1507-1578	248
Fain-McGaha et al.	6-Wilson	Geraldine	1553-1570	225
Fain-McGaha et al.	3-Wilson	Geraldine	1550-1556	25
Fain-McGaha et al.	4-Wilson	Geraldine	1565-1570	100
Golhke et al	2-Taylor	Geraldine	1564-1566	25
Golhke et al	1-Heir	Geraldine	1560-1572	45
Petroleum Prod.	1-Wilson	Geraldine	1572-1585	310
Panhandle et al.	4-Farmer	NAR	1533-1535	25
Dixie	1-Wilson	Geraldine	T.D. 1604	Dry
Fain-McGaha et al.	1-Wilson	ATNCL	T.D. 1650	Dry
Johnson et al	4-Wilson	Geraldine	T.D. 1635	Dry
Gardner-Kruger	3-Parrish	Geraldine	T.D. 1575	Dry
Simms	23-Tuberville	Carson	T.D. 1778	Dry
Minton	1-Dycus	Barnett	T.D. 1402	Dry
Texas	1-Young	Hooper et al	T.D. 1351	Dry
Long	1-Ikaid	JCSL	T.D. 1206	Dry
Burns et al	1-York	TE&L	T.D. 1500	Dry
United Prod. et al.	1-Lemon	BBB&C	T.D. 825	Dry

Clay County

Western	3-Wright	TE&L	842-850	10

Denton County

Duffy et al	1-Fortenbarry	Fortenbarry	T.D. 3404	Dry

Montague County

United Prod.	1-Jackson	Davis	T.D. 2980	Dry
Carter et al	4-Bouldin	Chacon	809-825	30

Wichita County

Lomax-Swanner	2-Ethridge et al	PPSC	T.D. 1315	Dry

Wilbarger County

Texas	3-Castleberry	H&TC	T.D. 2752	Dry
Consolidated	2-Wheeler	H&TC	T.D. 2503	Dry
Sloan et al	2-Waggoner	H&TC	4080-T.D.	Dry
Lowery	2-Deep Harrold Pet.	H&TC	T.D. 852	50
Waggoner	4-Waggoner	H&TC	2359-2383	145
Tower et al	2-Waggoner	H&TC	2297-2319	580
Texas	1-Waggoner	H&TC	2333-2335	508
Texas	3-Waggoner	H&TC	703-716	.16M

Young County

Kleiner-West	5-Langston	TE&L	532-556	475
Shappell	4-Johnson	Sargent	504-528	40
Shappell	5-Johnson	Sargent	500-529	5
Shaw-Riggs	1-McKinley	TE&L	522-537	25
Myers	1-Johnson	Sargent	491-500	15
Cunningham et al.	5-Hawkins	TE&L	507-532	40
Pennell et al.	4-Boone	BBB&C	490-517	80
Kleiner-West	2-Hawkins	TE&L	494-512	10
Cooper-Hamilton	1-Thomas	TE&L	T.D. 1301	Dry
Moran	1-Loftin	Splane	T.D. 800	Dry
Panhandle et al.	2-Pittman	Matthews	T.D. 752	Dry
Williams	1-Speakman	Stoneman	T.D. 560	Dry
Donohoo	1-Furr	TE&L	T.D. 1202	Dry
Albright	1-Anderson	TE&L	T.D. 550	Dry
Anderson et al.	1-Miller	TE&L	T.D. 550	Dry
Consolidated et al.	1-Nall	BS&F	T.D. 644	Dry

PANHANDLE

Gray County

Empire	1-Bender	I&GN	3145-3500	275
Magnolia	1-Wall	I&GN	3170-3368	335&4M
Danciger	10-Jackson	H&GN	3022-3027	2734
Dalaney et al.	1-Jackson	H&GH	T.D. 3060	Dry
Gibson	3-Bowers	H&GN	3129-3205	750
Majestic	4-Bowers	H&GN	3040-3060	225
Texas	1-Lester et al.	B&B	2040-2632	20&27M
Ray et al.	1-Chapman	H&GN	2774-2800	4300

Hutchinson County

Phillips	1-Ellis et al.	M&C	2933-2965	25

Potter County

El Rio	1-State River Bed.		1760-1897	25M

Sherman County

Gibson	1-Bivins	GH&H	T.D. 3660	Dry

Wheeler County

South Vernon	1-Sorenson	H&GN	T.D. 2112	Dry
Sabine	1-Woodley	H&GN	1850-1948	46M

WEST TEXAS

Garza County

Gulf Prod.	1-Swenson	H&GN	T.D. 5105	Dry

Mitchell County

Trees	1-Milles	Smith	T.D. 1766	Dry

Pecos County

Skelly	1-Tippett	TC	1280-1418	165
Allsman-Bell	12-State	Pecos River Bed	1035-1100	30

Reagan County

Big Lake	137-Univ.	Univ.	2940-2970	85 (18 Hrs.)
Big Lake	129-Univ.	Univ.	2657-2914	385
Roxana	1-Sawyer Cattle Co.	Easly	T.D. 3347	Dry

Winkler County

Humble	10-Hendricks	PSL	2810-2869	2021
Southern Crude	2-Hendricks	PSL	2965-3100	600
Atlantic	4-Hendricks	PSL	2765-2787	9870
Humble	7-Hendricks	PSL	2893-2915	1738
Humble	5-Hendricks	PSL	2885-2924	1953
Landreth Prod.	2-Hendricks	PSL	2962-3068	3150
Pure	4-Hendricks	PSL	2771-2792	1300
Pure	4-Hendricks	PSL	2705-2927	1815
Texon	2-Hendricks	PSL	2750-2751	3670
Turman et al.	8-Hendricks	PSL	2680-2967	1600
Southern Crude	2-Hendricks	PSL	2915-3054	840

Completions in North Louisiana and Arkansas, Week Ended April 12, 1928

Louisiana—Webster Parish—Spring Hill

Company	Well	Location	Depth	Yield
C. H. Lyons et al.	Bailey No. 1	29-23-9	2732	6M gas
Magnolia Pet. Co.	Bailey No. 1	29-23-9	2734	10M gas
Sun Company	Haines No. 1	30-23-9	2721	25M gas

Bossier Parish—Cartersville

Louisiana Pet. Co.	Peyton No. 1	25-23-12	3079	43M gas
Magnolia Pet. Co.	T. D. Cason No. 1	1-22-12	3091	2M gas
Nat. Gas Prod. Co.	Floyd No. 1	25-23-12	3088	5M gas

Bossier Parish—Elm Grove

Ark. Nat. Gas Co.	Van Hoose B-2	36-16-12	1902	6M gas
R. O. Roy	Caplis No. 7	25-16-12	1538	20 bbls.

Caddo Parish—Pine Island

Shreveport Oil Corp.	Muslow No. 2	32-21-15	2127	50 bbls.

Caddo Parish—Blanchard

Magnolia Pet. Co.	J. W. Furrh No. 2	28-18-16	888	12M gas

Ouachita Parish—Monroe

Company	Well	Location	Depth	Yield
Imperial O & G Co.	Stubbs No. 5	13-19-3E	2194	4M gas
Jordan Drilling Co.	Pereboom No. 1	32-19-4E	2206	4M gas

La Salle Parish—Urania

H. T. Taylor	Urania No. 5	19-10-2E	1598	dry, aband.

East Texas—Panola County

S. H. Gardner et al.	Caven No. 2	Jordan HRS	1006	4M gas
Natural Gas & Prod. Co.	T. C. Adams No. 4	Evans-Bracken HRS	2336	salt water
M. H. Smith	W. C. Agurs No. 1	Jordan HRS	1080	5M gas
Nat. Gas & Prod. Co.	Roquemore No. 2	Jordan HRS	957	5M gas

Arkansas—Nevada County

Ames & Zing	Womack No. 1	10-14-21	1215	dry, aband.
Autrey Oil Co.	J. Haynie F-1	6-14-20	1229	30 bbls.

Union County—Rainbow City

Pure Oil Co.	Gregory No. 1	10-17-14	3153	2037 bbls

Drilling Operations in Oklahoma, Kansas and Texas, Week Ended April 14, 1928

	April 14 Loc.	Rigs	Drg.	S.D.	Week Ended Total	April 7 Loc.	Rigs	Drg.	S.D.	Total
OKLAHOMA										
Burbank	..	16	9	..	25	..	3	13	..	16
Other Osage	5	11	6	2	24	5	8	10	1	24
Bristow-Cushing	4	6	34	8	52	5	5	37	7	54
North Oklahoma	10	7	57	42	116	10	8	57	41	116
South Oklahoma	9	12	106	18	145	10	8	106	22	146
Muskogee	..	9	62	17	88	..	10	60	20	90
Okmulgee-Bristow	10	25	71	24	130	11	30	71	23	135
Seminole Dist.	26	26	188	25	265	26	32	180	30	268
Total Oklahoma	64	112	533	136	845	67	104	534	144	849

	April 14 Loc.	Rigs	Drg.	S.D.	Week Ended Total	April 7 Loc.	Rigs	Drg.	S.D.	Total
KANSAS	32	62	140	61	295	27	62	122	64	275
TEXAS										
Central	..	84	241	163	488	..	91	252	164	507
Panhandle	..	72	97	69	238	..	64	92	73	229
N. Central	..	57	108	27	192	..	55	98	28	181
West	..	96	188	155	439	..	93	183	161	437
Laredo	..	1	25	19	45	..	1	25	19	45
Total Texas	..	310	659	433	1,402	..	304	650	445	1,399
New Mexico	..	3	21	26	50	..	5	17	27	49
GRAND TOTAL	96	487	1,353	656	2,592	94	475	1,323	680	2,572

New Field Operations in Oklahoma, Kansas, Panhandle, North, North Central and West Texas, Week Ended April 14, 1928

OKLAHOMA

Carter County

Company	Well No. Farm	Location
Hall et al	1-Miller	SWc NW NW 29-1-3 W
Boring et al	3-Walker	SEc SW SE NW 10-4-2 W

Cotton County

Cullum et al	1-Chambers	NEc SW 35-1-10 W

Creek County

Magnolia	31-Coker	NEc NW SW NW 16-18-7 E
Shaffer	4-Tiger	SWc NW 17-17-7 E
Haubert et al	3-Bruner	SEc SW NW SW 24-18-11
Smith et al	1-Unalotted	SWc NW SE 33-18-11
Devonian	2-Unalotted	C SE NW 4-18-12
Madden-Morgan	1-Farmer	SWc NW SE 13-15-9

Grady County

Franklin	2-Fobb	CWL NW SW 12-2-8 W
Franklin	1-Cox	NWc NE SW 17-4-6 W
Franklin	1-Long	NEc SW NW 1-4-7 W
Simpson-Fell	1-Long	SWc SE SE 36-5-7 W

Hughes County

Sutton-Hart et al	1-McGee	CNL NW NW 27-9-10 E

Jefferson County

Beck et al	1-Ryan	NWc SE NE 23-6-6 W
Heydrick et al	2-Spring	NWc NE SW 24-6-6 W
Luke	1-Black	C NE SE 20-6-5 W

Kay County

Dewey-Mitchell et al.	1-Root	NEc NW SE 32-28-1 W
Martin et al	1-Buesing	C NE NW 9-27-1 E
Wentz	1-Williams	NEc SE NE 7-27-2 E

Osage County

Kewanee	1-	NWc SW 21-27-6
Kewanee	2-	NEc NW SW 21-27-6
Kewanee	3-	NWc NE SW 21-27-6
Kewanee	4-	SEc NW SW 21-27-6
Kewanee	5-	SWc NE SW 21-27-6
Kewanee	6-	NWc SE SW 21-27-6
Kewanee	7-	NEc SE SW 21-27-6
Kewanee	8-	SWc SE SW 21-27-6
Kewanee	9-	SEc SW 21-27-6
Phillips	1-	SWc SE 21-27-6
Phillips	2-	SEc SW 21-27-6
Phillips	3-	NWc SW SE 21-27-6
Devonian	1-	SEc SW NE 5-24-9
Commercial Drlg	4-	SEc NE SW SW 22-21-12
S. S. Home	1-	NWc NE SE 2-20-10

Logan County

Blackwell et al	1-Moore	NWc SE 28-18-4 W

Muskogee County

Mitchell	2-Barnett	SEc SW SW 35-16-15 E
Dugan et al	1-Robeson	SEc NE SE 36-15-18 E
Reed	1-Wade	NEc SE SE SW 31-15-19 E
Reese et al	1-Parnell	SWc SE SE 31-15-19 E
Jolly	2-Cherry	C NE NW 2-14-18 E
Dixon et al	5-Davis	NEc NW NE NW 12-14-18 E
Ark-Add	4-Lot-34, Blk-16	CSL SE NE SW 6-14-19 E
Threld et al	1-Cobb	SWc NW NW SW 6-14-19 E
Walton	2-Kell	NEc SE SW 6-14-19 E
Walton	3-Kell	SEc NE SE SW 6-14-19 E
Butler	1-Lot-48, Blk-3	CEL SE SW NW 6-14-19 E
Casey et al	1-Smith	CWL NW SW NW 6-14-19 E
Olean	1-Lot-20, Blk-16	C SE NE SW 6-14-19 E
Ransom et al	2-Cobb	CSL SW SW 33-14-19 E

Noble County

Miller et al	1-Howe	C NW SE 11-24-3 E

Okfuskee County

Henry-Avers	3-Buckley	SWc SE SW SW 12-12-11	
Umburn	1-Hill	NEc NW SE 11-10-11	
Mid-Continent	1-Morris	NEc SW NW 29-10-9 E	OWD

Okmulgee County

Stout et al	2-Phillips	CNL NW NW 29-16-14
Denton-Marshall	2-Tiger	SWc NW 30-15-13 E
Wallace	8-Colbert	NWc NE SE 14-14-14 E
Hazlett et al	3-Manuel	NWc NE NW 33-13-13 E
Cuseck et al	5-Wiley	SWc NW NE 29-13-14 E
Sheldon	3-Skelton	CNL SW SE 15-13-12
Fair	7-Palmer	C S½ SE¼ 36-13-11

Pontotoc County

Homaokla	1-Ritchie	NEc SW SE 1-4-7 E
Franklin	1-Brown	SEc NW SE 2-4-8 E
I. T. I. O.	2-Bingham	SWc NE SW 8-5-8 E
Superior	1-Roper	NEc NW 32-5-5 E
Westheimer et al	1-Millner	SEc 8-5-8 E OWD

Pottawatomie County

Independent et al	3-Wallace	SWc 14-7-4 E
Magnolia	3-Robbins	SEc 15-7-4 E
Twin State	1-Brown	NEc SW NE 22-7-4 E
Independent et al	1-Carrson	NWc 23-7-4 E
Magnolia	1-Bullock	NEc SE SW 17-7-5 E

Seminole County

Shaffer et al	1-Jones	SWc NE 18-10-7 E
Magnolia	5-Simpson	SEc NW SE 10-9-5 E

Stephens County

Magnolia	5-Green	SEc NW 13-1-4 W
Westheimer	1-Martin	NEc 13-1-4 W
American Pipe Line	2-Bond	CWL NW SW 7-2-7 W
Producers	1-Brown	NWc SW NW 7-2-7 W

KANSAS

Butler County

Murphy-Slater	7-Maxwell	SEc NW 31-24-4 E
Mathews et al	1-Harsh	NEc SW 5-24-8 E
Mohawk	2-Palmer	NWc NE SE 6-27-6 E

Coffey County

Sheedy et al	4-Hanna	C NW SW 11-23-13 E

Cowley County

Roth-Faurot	1-Perkins	C SE 18-31-5 E	
Marland	3-Graham	SEc SW NE 15-32-4 E	OWD
Knox Drlg	1-Mattison	Lot-7, Blk-44, 22-32-4 E	OWD
Lewis	1-Cook	NEc SW 18-32-6 E	
Roth-Faurot	2-Smith	NWc SE SE 22-33-4 E	

Elk County

Company	Well No. Farm	Location
Minnehoma	2-Ferguson	NWc SW 3-31-8 E

Ellis County

Thomas et al	1-Boettcher	C SW 21-13-19 W

Greenwood County

Theta	8-Frankhouser	SEc NE SW SE 23-22-12 E
Simmons et al	1-Frankhouser	NEc SW 26-22-12 E
Sheedy et al	1-Gilroy	SWc SE 12-25-12 E
Mendenhall et al	1-Grossart	NEc NW SW 5-25-13 E
Mohawk	3-Grundy	NWc SE NW 7-27-11 E

McPherson County

Derby	1-Boughman	C SW SW 21-18-2 W

Marion County

Givens-Hershey	1-McCoy	SWc SE NE 14-17-4 E
Phillips	1-Boyington	NEc SE NW 15-17-4 E

Rooks County

Phillips	1-Tatkenhorst	NEc NW 14-9-16 W

Sumner County

Helmerick et al	1-Broadhurst	SEc NE NE 13-33-2 E

Woodson County

Pure	7-Peck	SEc NE NE 20-23-14 E
Peterson et al	1-Andrews	SEc SW SW 31-23-16 E
Fees et al	1-Roberts	NWc NE 3-24-17 E
Curtis et al	1-Rhea	NWc NE SW 22-25-14 E

WEST TEXAS AND PANHANDLE

Carson County

			Survey
Morris et al	1-Barnard	NWc SW SE Sec-44, Blk-4	I&GN

Crockett County

Young-Donnelly	2-Shannon	NWc SE Sec-18, Blk-10	GC&SF

Donley County

Martin-Watson	1-Ball	SWc NE Sec-22, Blk-E	D&P

Ector County

Texas	6-Connell	NWc Sec-10, Blk-B-16	PSL

Glasscock County

World	1-McDowell	SW SE SW Sec-32, Blk-34	T&P

Gray County

Shamrock	2-Chapman	NWc NE Sec-50, Blk-25	H&GN
Ray-Massie	2-Chapman	SEc SW Sec-51, Blk-25	H&GN
Parker et al	1-Parker	C NE	Lynch
Phillips	1-Reiger	NWc NE Sec-87, Blk-B-2	H&GN

Hartley County

Amarillo	7-Bivins	C NE Sec-7, Blk-25	EL
Amarillo	8-Bivins	CWL Sec-4, Blk-25	EL
Amarillo	9-Bivins	C NW Sec-6, Blk-21	CS&S

Howard County

F. H. E.	1-Roberts	SEc NW Sec-136, Blk-29	OWD W&NW

Hutchinson County

Gulf Prod	40-Dial	C W½ SW¼	King
Gulf Prod	41-Dial	C SE NW Sec-130, Blk-2	EL

Loving County

Hadlock et al	2-Ramsey	NE NW NE Sec-80, Blk-1	W&NW

Martin County

Phillips	1-Slaughter	SEc Sec-77	Bauer et al.

Moore County

Amarillo	6-Bivins	NWc Sec-32, Blk-11	EL

Pecos County

Red Bank	3-Smith	Sec-24, Blk-194	GC&SF

Swisher County

Adams et al	1-Crawford	CNL NW NE Sec-38, Blk-W-1	

Upton County

Humble	8-Ricker	Sec-5	Denton

Wheeler County

Hatcher et al	3-Fee	CWL NW SW Sec-80, Blk-23	H&GN

Winkler County

Pure	16-Hendricks	SW NE SE Sec-34, Blk-B-5	PSL
Pure	15-Hendricks	SE NW SE Sec-34, Blk-B-5	PSL
Pure	14-Hendricks	NE SW SE Sec-34, Blk-B-5	PSL
Pure	13-Hendricks	NW SE SE Sec-34, Blk-B-5	PSL
Texon	3-Hendricks	SE SW SW Sec-45, Blk-26	PSL
Southern Crude	2-Hendricks	NE SE NE Sec-42, Blk-B-5	PSL
Independent	6-Vardeman	NW NE NW Sec-41, Blk-B-5	PSL
Humble	14-Hendricks	NE NW NW Sec-41, Blk-B-5	PSL
Southern Crude	4-Hendricks	SE NW SW Sec-33, Blk-26	PSL
Cranfill-Reynolds	1-Hendricks	SE NW NW Sec-33, Blk-26	PSL

NORTH AND NORTH CENTRAL

Anderson County

Humble	1-Mandelstam	....	Roberts

Archer County

Fain-McGaha	7-Wilson	Blk-20	Geraldine
Petroleum Prod	2-Wilson	Blk-13	Geraldine
Johnson et al	4-Wilson	Blk-19	Geraldine
Fain-McGaha et al	5-Wilson	Blk-27	Geraldine
Bridwell	2-Wilson	Blk-12	Geraldine
Dixie	1-Wilson	Blk-34	Geraldine
Rose	1-Garvey	Sec-1856	TE&L
Sheldon et al	1-Jones	Abstract-361	Rodemeyer
Richardson	1-Richardson	Abstract-943	McCune
Panhandle et al	5-Farmer		North Andrews Ranch
Texas	1-Coleman	Sec-80, Blk-4	ATNC

Brown County

Jay Hawk	5-Boyson	Blk-4	Williams
Phillips	11-Hickman	Blk-783	Benson
Kone Prod	1-Hickman	Blk-783	Benson
Anna Bell	2-Hickman	Blk-783	Benson
Midland	2-Butler	Blk-783	Benson
Amerada	1-Beck	Blk-43	T&NO
Cranfill-Reynolds et al.	2-Hill	Blk-63	Mudgett
Cranfill-Reynolds	1-Newton	Blk-623	Honeycutt
Henshaw	6-Bush	Blk-624	Kenney
Henshaw	7-Bush	Blk-624	Kenney
Henshaw	8-Bush	Blk-624	Kenney
Mitcham et al	1-Thomason	Clelland	
Cox-Drake	1-Culluson	Sec-4	ET
Mexana	1-Bradley	....	Smith

(*Continued on Page 46*)

New Field Operations in Oklahoma, Kansas, Panhandle, North, North Central and West Texas, Week Ended April 14, 1928

(*Continued from Page 45*)

Company	Well No. Farm	Location	Survey
Smith	2-Trueheart	Blk-638	Lamar
Cox-Denniger	1-Culluson	....	ET
Buffington-Smith	1-Moore	Blk-146	Williams
Callahan County			
Richard	1-Harris	Sec-42	D&DA
Swoveland et al	1-Shackleford	Sec-14	D&DA
Mortimor et al	1-Hickman	Sec-1	I&GN
Mortimor et al	1-Hickman	Sec-2	I&GN
Clay County			
Western	3-Wright	Sec-2632	TE&L
Coleman County			
Smith	1-Hill	Blk-664	Sprague
Continental et al	1-Overall	Blk-66	Overall
Cooke County			
Abernathey et al	2-Hundt	Abstract-393	Godley
Eastland County			
Bryant	1-Pinkston	Abstract-871	Click
Goodwin et al	2-Parker	....	Van Norman
McLester	1-Gailey	....	De Laney
Parson	4-Blockwell	Sec-13	McLennon Co. Sch. Land
Limestone County			
Lytle et al	1-Thompson	....	Varella
Montague County			
Spencer et al	7-Bouldin	Abstract-146	Chacon
Carter	5-Bouldin	....	Chacon
Runnels County			
Agnew et al	1-Russell	Blk-13½	Hollien

Company	Well No. Farm	Location	Survey
Wichita County			
Bridwell et al	1-Womack	Blk-6	GC&SF
Lomax et al	2-Ethridge et al.	Blk-6	CSL
Stump	1-Crudup	Sec-4, Blk-100	DCSL
Merrick Drlg. et al.	1-Ferguson	Blk-12, Abstract-462	Lewis
Wilbarger County			
Texas	2-Waggoner	Sec-24, Blk-4	H&TC
Waggoner	5-Waggoner	Sec-25, Blk-4	H&TC
Milham	19-Waggoner	Sec-31, Blk-4	H&TC
Fain-McGaha	2-Waggoner	Sec-24, Blk-4	H&TC
Fain-McGaha	5-Waggoner	Sec-24, Blk-4	H&TC
Fain-McGaha	4-Waggoner	Sec-31, Blk-4	H&TC
Lawson	3-Waggoner	Sec-25, Blk-4	H&TC
Hines	1-Carter	Sec-35, Blk-6	H&TC
Young County			
Allday-Carter	7-McKinley	Sec-1489	TE&L
Anderson-Chandler	1-Miller	Sec-1916	TE&L
Simms	1-Morrland	Sec-1485	TE&L
Parker et al	1-Holt	Abstract-1385	Blakley
Myers	2-Johnson	Abstract-253	Sargent
Shaw-Riggs	2-McKinley	Sec-1489	TE&L
Allday	3-Johnson	Sec-15, Abst-253	Sargent
Consolidated et al	1-Wall	Sec-1, Abstract-40	BS&F
Kelleper et al	1-Stratton	Sec-2, Abstract-33	BBB&C
Kleiner-Hill et al	5-Langston	Sec-1490	TE&L
Kleiner et al	2-Hawkins	Sec-1914	TE&L
Shappell	5-Johnson	Abstract-253	Sargent
Cunningham	5-Hawkins	Sec-1914	TE&L

Little River Extension Well is Failure

(*Continued from Page* 41)

a meeting for April 17 and outlined plans to be submitted to the operators for cooperatively testing, by the "dry hole money" contribution plan, these two areas and those around 33-8-6 and 5-7-7, where Gypsy and Mid-Continent Petroleum Corp. have Wilcox sand producing wells shut in to 50 barrels per day. Because some leases are to expire within a few months unless drilling is done, a few wells will be necessary in the four areas.

The development campaign in the Allen pool northwest extension, in Pontotoc and Seminole counties, Okla., is getting a set-back. Several weeks ago completion of Mid-Continent Petroleum Corp.'s No. 1 Fleet, in 7-5-8E for upward of 2000 barrels, caused a sizable campaign to be started.

The same company got a good well in the No. 2 on this lease, but No. 3 in the center E½ NE NW SE of 7-5-8 swabbed 288 barrels from sand topped at 2455 feet and, when deepened, got 1800 feet of water from 2495 to 2498 feet. It was then plugged back to 2468 feet and swabbed 40 barrels, although it was expected to better this in a short time.

No. 4 on the same lease, NE SE SE, found a sand at 2516-2548 feet, which carried oil; a gas sand at 2561-2564 and at the end of the week was drilling at 2700 feet and flowing 45 barrels daily.

No. 6 Fleet, in the NW SE of 7-5-8, got a hole full of water at 2635-55 feet and is being deepened. The west offset to No. 6, the No. 1 Amos "C" of the Sinclair Oil & Gas Co., got a hole full of water at 2700-2705 feet.

In the Earlsboro pool, Magnolia Petroleum Co. drilled into the Wilcox its No. 1 Hyde, a diagonal offset southeast to the big well of the Prairie Oil & Gas Co., which is still making better than 3500 barrels daily, though two months old. Magnolia's well, in the NW SE NW of 13-9-5, flowed 1244 barrels April 12. Its total depth is 4419 feet.

Logan county, Okla., the Mid-Continent's deepest producing field, makes progress slowly. Champlin Refining Co. has gotten down to within striking distance of the Wilcox sand and, at the end of the week, had 500 feet of 35 gravity oil in the hole from a broken sand at 5815-5825 feet.

This is in the SE SW of 8-19N-4W and more than two and a half miles north and a little east of the Roxana Petroleum Corp.'s Wilcox discovery in Sec. 30. The latter, which started to make its big production the end of last June, is still flowing 1800 barrels daily.

Auto Output Surpasses 1927 Production

NEW YORK, April 14.—Automotive Industries this week said:

Continuance of automotive business on an even keel is indicated for the second quarter of 1928, now two weeks under way. National Automobile Chamber of Commerce members during the first quarter went ahead of the same period in 1927 both in sales and in production, but the total number of passenger cars delivered at retail by the industry including Ford appears to have been slightly less during the first three months of this year than during the first three of last. Total passenger car production, however, including that of Ford was nearly 5 per cent ahead of last year's first quarter.

As a whole there can be no question but that 1928 is going along better than did 1927 and that the second quarter will continue to show similar favorable aspects.

New Wells at Rincon Prove Two Sands

LOS ANGELES, April 14.—Three new wells at Rincon this week proved for commercial production two sands.

General Petroleum Corp.'s Hobson A 1 came in for 1365 barrels of 30.4 gravity oil at 3316 feet, with casing at 3186 feet.

The same company's Tomson No. 1 made slightly better than 1000 barrels of 30.7 gravity oil at 3233 feet. Both wells are along the ocean front and are producing from the second oil sand. The first oil sand has not proved to be worthwhile.

Chanslor-Canfield-Midway Oil Co.'s Hobson B 1, up on the mountain from the ocean front, blew in making 700 barrels of oil at 5700 feet. This proves the deep zone, but it had not been possible for mechanical reasons to place the well on production. This well was started more than a year ago and had shown much gas for several months, with cores bringing up a rich sand.

Completions this week in the second and very deep sands indicate deeper drilling will be possible and profitable.

The new field in Ventura County is now making nearly 4000 barrels a day, with about 15 wells drilling.

TULSA, April 16.—K. W. Shimeall, former superintendent of the Glen Rock, Wyo., refinery of the Continental Oil Co. has been made superintendent of the Sapulpa, Okla., plant. He succeeds M. S. Beringer who has gone to Roumania to do some special engineering work. A. M. Holvid, who was Mr. Shimeall's assistant at Glen Rock, has been made superintendent of that plant.

Reading Casing is being used in West Texas

SULPHUR WATER

has been the bane of operators in the fields of West Texas

Its corrosive effect on materials, particularly pipe, has been disastrously rapid. Operators who installed steel casing, as short a time as six or eight months ago, are already having trouble with it.

Today many of the operators are turning to Reading Genuine Wrought Iron Casing. Thousands of feet of it are already being used. More and more wells are being lined with it because these operators realize that profits lie only in uninterrupted production.

DOUBLE WELDED PIPE affords greater strength of weld, greater resistance to corrosion and vibratory strains due to denser structure, better thread and accuracy and strength.

Reading Genuine Wrought Iron Casing, Line Pipe and Tubing is the ONLY pipe made by the DOUBLE WELDED PROCESS. It stands supreme for oil field uses.

READING CASING

GENUINE WROUGHT IRON

World's Largest Manufacturers of Genuine Wrought Iron Pipe

READING IRON COMPANY HOUSTON, TULSA, FT. WORTH, SAN FRANCISCO, LOS ANGELES **READING, PENNSYLVANIA**

Two More Production Engineering Districts Are Organized

Staff Special
CLEVELAND, April 16

TWO more districts in the American Petroleum Institute's division of development and production engineering were organized last week. They are the California and Rocky Mountain divisions.

The eastern district was organized at a meeting in New York in February and the Texas-Louisiana-Arkansas district will be organized at a meeting in Fort Worth April 25.

Fred E. Wood, Midwest Refining Co., Casper, Wyo., is chairman of the Rocky Mountain district. He was appointed at the A.P.I. convention in Chicago in December when the division was organized. Officers elected at the district organization meeting in Casper April 12 are:

Sam Grinsfelder, petroleum engineer, Union Oil Co. of California, first vice-chairman; Dan Hageman, superintendent, Queen City Oil Co., Shelby, Mont., second vice-chairman, and Prof. P. F. Shannon, Colorado School of Mines, Boulder, secretary.

In resolutions was indorsed the report of the Secretary of the Interior Work's Committee of Nine. Adoption by Rocky Mountain states of the U. S. Geological Survey's regulations which make possible the conservation of gas, was recommended. The regulations have been adopted by Wyoming. They are considered sufficiently flexible to cover all cases for conservation of gas and sufficiently rigid to be effective. Copies of the resolutions will be sent governors of Rocky Mountain states.

Need for unit operation of pools was discussed. Other Rocky Mountain problems will be considered at a meeting next fall, the exact date of which has not yet been fixed.

Carl A. Young, standardization director for the institute, and head of the division, attended the California meeting April 11 with Trell Yocum, the institute's director of public relations. A. C. Rubel, Union Oil Co. of California, is chairman of the California district. Other officers were not elected but this nominating committee will present names at a later meeting: A. H. Bell, production engineer, Marland Oil Co.; George L. Andrews, petroleum engineer at Whittier for the Standard Oil Co. of California, and A. S. Hayes, chief petroleum engineer, General Petroleum Corp.

Martin Van Couvering presented a summary of the work done by the gas conservation committee appointed by the governor of California.

Guests of the California meeting were Edwin Higgins, California Chamber of Mines and Oils; Reed Bush, state oil and gas supervisor; George Ratliffe, president, California Natural Gasoline Association; J. E. Elliott, vice-president, American Association of Petroleum Geologists, and Mr. Hodges, American Institute of Mining and Metallurgical Engineers.

Frank Brewster, Petroleum Reclamation Co., Bradford, Pa., is chairman of the eastern district. Other officers are: W. J. Brundred, Brundred Oil Corp., Oil City, Pa., vice-chairman, and Forest D. Dorn, Forest Oil Corp., Bradford, Pa., secretary.

R. B. Kelly, Pure Oil Co., is chairman of the Texas-Louisiana-Arkansas district. Papers will be read at the Fort Worth meeting by M. E. Schwartz, Rio Bravo Oil Co. Houston; W. W. Scott, Pure Oil Co., Tulsa, and F. S. Seeley, Humble Oil & Refining Co., Wink, Texas.

Gypsy Saves $5000 by Not Running in 8¼" Casing

TULSA, April 14.—In keeping with the efforts of all operators to cut down drilling and operating costs, the Gypsy Oil Co. is effecting a saving of about $5000 per well in holes drilling in the southern part of the Seminole district.

This saving consists of a complete string of 8¼-inch casing, which is saved by not running it at all.

The hole is drilled to the Viola lime with the rotary tools, and 6⅝ pipe is set in this formation. The rig is standardized and the well completed to the sand with cable tools. A string of 5⅛-inch pipe, with the two bottom joints perforated, is run on top of the sand.

Although no trouble has been experienced so far in any of the four wells which have been cased in this way, a 11-inch hole has been drilled so that it would be possible to set 8-inch should trouble develop during the drilling.

The time required to drill the wells has also been greatly reduced, the last well being on the Viola ready to case in 24 days.

Casing is not the only saving which is possible with this method. The "air string" of tubing is no longer needed. The air or gas is put down the annular space between the 5-inch and the 6-inch and the well is flowed through the 5-inch. According to a production official of the Gypsy, this is a more satisfactory way of producing the well than by flowing it through tubing or between two strings of pipe.

Pure and Applied Research

"APPLIED research creates a fly swatter to crush the fly that loiters on your bald dome. Pure research furnishes screens to keep out the fly. Better yet, it alters conditions until the creature has no incentive to linger in the vicinity," according to Stanwood W. Sparrow, of the Studebaker Corporation of America, in the *S.A.E. Journal*, the organ of the Society of Automotive Engineers. "The distinction between pure and applied research therefore is primarily one of time. Applied research cures a trouble after it has arisen, pure research cures the trouble before it arises."

New York Marketer Buys Deep Water Sites

KINGSTON, N. Y., Apr. 14.—Expansion this year by A. R. Newcombe Oil Corp., recently announced by L. H. Doty, vice president, will result in an increase in its marketing facilities to several times their present proportions.

A 40-acre site on the Albany port at Rensselaer, N. Y., has been purchased on which a bulk and distributing station will be built costing $200,000. Storage tanks for 5,000,000 gallons of gasoline, and additional tanks for motor and fuel oils will be installed there. This is an advantageous site for both rail and water shipping at Rensselaer, as shipments can be made to any part of the state by barge, coast wise steamer or tank car. The property is south of the Bayer Aspirin Co. plant.

Deep water frontage has also been obtained in recent purchase of property at New Hamburgh, N. Y. This cost approximately $15,000. A bulk and distributing center is planned for this site and future expansion across the Hudson is looked for from this plant.

The company's present Albany branch is at Rensselaer where storage capacity is 50,000 gallons. This equipment will be moved to the newly acquired 40-acre tract. The Kingston plant has 2,000,000 gallons capacity and one at Newburgh has 1,500,000 gallons.

The company operates railroad marketing stations at Grand Gorge, Phoenicia, Hobart, Hunter, Ellenville, Delhi, Arkville, Downsville and Newburgh N. Y. It handles Keystone gasoline and kerosene and Velvo motor oils and greases. A. R. Newcombe is president.

Cost Finding Methods for Marketing And How to Use Them

Article 6—Assembling the Facts of Business

By Frank H. Emig

IN PRECEDING articles have been shown various forms and the methods used in collecting data and recording facts about your business. The result of all this effort is accomplishing information necessary to the management in steering its Ship of Business safely into the port of SUCCESS.

Vital facts of the business are contained in the figures shown on these reports from day to day, month to month and year to year. These figures will point out to the management whether or not the business is establishing itself on a more solid foundation from time to time. Improvements or depressions in financial condition can be readily noted by comparisons between various periods of operation.

In addition to pointing out such valuable information, these figures will furnish you with the necessary weapons with which to combat the ravages of excessive loss and overhead, the two invisible employes every business has on the payroll in some form or other.

These figures will enable the management intelligently to direct the business in such manner as to bring about complete coordination and cooperation of everyone interested in or working for that particular business. It enables the management to place the responsibility for success or failure in each department on the proper person or persons. It proves to the lowest paid employe that he is as vital to the ultimate success of the business as his higher paid brother.

The reports and charts of any business can be likened to the compass and mariner's chart used by all vessels plying the high seas.

In the figures we have presented in previous articles we have endeavored to show how the data is collected. It has been necessary in explaining the method to present some figures. But it is desired that you pay little attention to the values presented on these forms and only secure from them the procedure followed.

Referring back to the Chart of Accounts we give you herewith a Trial Balance of the books (See Fig. 9) before the figures given throughout these articles have been posted to the various accounts. We then show the posting as it would appear on the various accounts when posted, and the resulting balance after posting. In other words the first two columns shown in Fig. 9 represent a Trial Balance of your general ledger before our hypothecated monthly figures have been posted and the last two columns represent the Trial Balance of your general ledger after the close of the month.

Now that we have the new Trial Balance established so that we are satisfied that the month's business has been posted to the various accounts accurately, we use the figures contained in this Trial Balance for the basis of our regular monthly financial reports: Balance Sheet and Profit and Loss Statement.

The Balance Sheet will reflect the financial condition and the trends of the business from month to month regardless of the number of departments contributing to the results shown.

A consolidated Profit and Loss Statement for the business as a whole, which is accomplished by the application of the controlling account figures shown in the trial balance, will give us the net resulting Profit or Loss for the period for the business as a whole. However, it is possible and practical to know which and how much each department or unit in the business is contributing to this result. Therefore by separating the totals of these controlling accounts and applying the amounts applicable to each department or unit to it, we can see and lay plans to correct or improve them as the occasion demands.

You will note that we have not

Fig. 9—Typical Trial Balance

Acct. No.	Acct. Name	Trial Balance Before Posting Dr.	Trial Balance Before Posting Cr.	Amounts Posted Dr.	Amounts Posted Cr.	Trial Balance After Posting Dr.	Trial Balance After Posting Cr.
1.	Petty Cash Funds	50.00				50.00	
2.	Cash on Hand	125.00		429.35	429.35	125.00	
3.	Cash in Bank	1000.00		429.35	620.17	809.18	
5.	Accounts Receivable	4000.00		48.00	120.50	3927.50	
7.	Notes Receivable	200.00			100.00	100.00	
10.	Mdse. Inventory (Bulk Plants)	5000.00		801.10	118.00	5683.10	
11.	Mdse. Inventory (Service Stations)	1500.00		72.00	68.10	1503.90	
14.	Land	10000.00				10000.00	
15.	Miscell. Buildings	2000.00				2000.00	
16.	Bulk Plant Tanks	1500.00				1500.00	
17.	Service Station Pumps, Tanks and Equip.	2000.00				2000.00	
18.	Autos and Trucks	2500.00				2500.00	
19.	Misc. Equipment	850.00				850.00	
20.	Office Fur. and Fixtures	500.00				500.00	
21.	S. S. Bldg. No. 1	3000.00				3000.00	
27.	Prepaid Insurance	250.00	(Monthly			250.00	
28.	Prepaid Rent, etc.	150.00	Entry not			150.00	
29.	Prepaid Sup. and Ex.	250.00	Shown)			250.00	
30.	Notes Payable		6000.00				6000.00
31.	Accounts Payable		2000.00	560.77	801.10		2240.33
32.	Trade Acceptances Payable	2000.00					2000.00
33.	State Tax Payable		None		30.00		30.00
34.	Outstanding Coupons		100.00	6.00	10.00		104.00
35.	Accrued Taxes		250.00				250.00
36.	Accrued Interest		125.00				125.00
37.	Accrued Payroll		None				None
40.	Reserve for Dep'r.		2000.00	(Entry omitted)			2000.00
41.	Reserve—Doubtful Accts.		400.00				400.00
42.	Capital Stock Issued or Capital Invested		20000.00				20000.00
43.	Profit and Loss (Surplus Account)		2000.00				2000.00
50.	Wholesale Sales		None		139.00		139.00
51.	Retail Sales		None		90.00		90.00
52.	S. S. Transfers		None		63.00		63.00
55.	Interest and Disc. Earned		None		9.10		9.10
58.	Returns and Allowances		None		.65	.65	
60.	Cost of Goods Sold—(Wholesale)	None		80.00		80.00	
61.	Cost of Goods Sold—(Retail)	None		68.10		68.10	
62.	Cost of Goods Tr'fd	None		38.00		38.00	
65.	Interest Expense	None				None	
70.	Direct Wholesale Exp.	None		25.00		25.00	
80.	Direct Retail Exp.	None		15.00		15.00	
90.	Sales and Adm. Exp.	None		25.00		25.00	
	Totals	$34875.00	$34875.00	$2598.32	$2598.32	$35450.43	$35450.43

Note: The Income and Expense Accounts marked "None" were closed out at the end of the preceding year.

One Gallon Pump

Priced Right

Ask Us

Volcker Mfg. Co.
Huntington, Ind.

Fig. 10—Typical Profit and Loss Statement

YOUR OIL COMPANY

Profit and Loss Statement

(for month of January 1928)

Sales		
Wholesale Sales	$ 139.00	
Retail Sales	90.00	
Service Station Transfers	63.00	
Total Sales	292.00	
Less: Returns and Allowances	.65	
Net Sales		$ 291.35
Cost of Goods Sold:		
Wholesale	80.00	
Retail	68.10	
Transfers	38.00	
Total Cost of Goods Sold		186.10
Gross Profit		$ 105.25
Operating Expenses		
Direct Wholesale Expense	25.00	
Direct Retail Expense	15.00	
Sales and Administrative Exp.	25.00	
Total Operating Expense		65.00
Net Profit From Operations		$ 40.25
Other Income		
Interest and Discount Earned	9.10	9.10
		$ 49.35
Other Expense		
Interest Expense	None	
Officers or Employees Insurance	None	None
Net Profit for Period		$ 49.35

Monthly sales data (in totals) and Comparisons can be shown on the bottom of this report(as)

Product	Wholesale This year	Wholesale Last Year	Retail This Year	Retail Last Year	Total Increase	Change Decrease
Gasoline No. 1						
Gasoline No. 2						
Kerosene						
Motor Oil						
Grease						
Etc.						
Etc.						

(Another method of presentation is as follows)

	Total all Units	Wholesale Department	Retail Department	Station Transfers
Sales	$292.00	$139.00	$ 90.00	$ 63.00
Less: Returns, Etc.	.65		.65	
Net Sales	$291.35	$139.00	$ 89.35	$ 63.00
Cost of Goods Sold	186.10	80.00	68.10	38.00
Gross Profit	$105.25	$ 59.00	$ 21.25	$ 25.00
Operating Expenses: (Shown here in total from Controlling Accounts but can be itemized from your subsidiary accounts)	40.00	25.00	15.00	
	$ 65.25	$ 34.00	$ 6.25	$ 25.00
		(25.00)		
Sales and Adm. Exp.	25.00	(These can be apportioned on some predetermined basis if desired—however—most expenses of this nature should be borne by the wholesale Department if the Stations are only allowed a set margin on which to operate.)		
Net Profit from Operations	$ 40.25	$ 9.00	$ 6.25	$ 25.00
Other Income Interest and Disc.	9.10			
Net Profit for period	$ 49.35			

Alliance for Reliance

in

GAS TANKS
FUEL OIL TANKS
SEPTIC TANKS
PAINT KETTLES
SUMP TANKS
AIR RECEIVERS
and for
STACK WORK
and all kinds of plate work, either welded or riveted.

A guarantee on every tank.

Standard sizes always ready.

Engineering service at your command.

Modern factory, modern manufacture, modest prices.

Located on three railroad main lines—double-quick delivery of double-satisfactory

TANKS

Ask for prices

The Alliance Tank Co.

Alliance ALLIANCE THOROWELD TANKS Ohio

shown in our Trial Balance the subsidiary accounts under Direct Wholesale, Direct Retail, or Sales and Administrative Expense as these are analytical accounts designed to enable the management to put its finger on the exact expense which may be increasing any one of the controlling accounts from time to time as shown by the consolidated Profit and Loss Statement for the business.

It is well to post and balance these subsidiary accounts monthly with their respective controlling accounts and attach to the consolidated report a statement of them. The particular feature we endeavor to bring out is that in case the management notices an increase in Direct Wholesale or Retail Expense and desires to know what caused such increase it would be a difficult and expensive task to analyze the figures contained in these controlling accounts in a hit and miss fashion. It also affords monthly comparisons of similar classifications of expenses as compared to sales volume of the selling units under comparison.

Should you have more than one bulk plant or service station in the wholesale and retail departments, your office can readily separate these departments into units of operation for analytical and comparative reports by units.

The sales and cost of goods sold for each will be taken from each

Fig. 11—Account No. 801

Service Station Agents Salary & Commission,

	Sub-Acct.	Unit	January Ref.	January Amt	February Ref.	February Amt
1	1801	Service Station No. 1				
2						
3						
4						
5						
6	2801	Service Station No. 2.				
7						
8						
9						
10						
11	3801	Service Station No. 3.				
12						
13						

These amount are posted from your books of original entry according to the account numbers shown opposite the amounts in the Controlling account Columns for each.

Note: Add up the totals for each month on each page of the Service Station or Bulk Plant Classification, which will give you a balance with the Controlling Account posting for that month.

Fig. 12—Typical Balance Sheet

YOUR OIL COMPANY

Balance Sheet (Also called Financial Statement)
(January 31, 1928)

(Derived from amounts shown in accompanying Trial Balance)

ASSETS

Current Assets		
Cash on Hand	$ 175.00	
Cash in Bank(s)	809.18	
Accounts Receivable	3927.50	
Notes Receivable	100.00	
Total Cash and Receivables	5011.68	
Inventories: Mdse. for resale	7187.00	
TOTAL CURRENT ASSETS		$ 12198.68
Fixed Assets		
Land	10000.00	
Misc. Buildings (Whse. Etc.)	2000.00	
Bulk Plant Tanks	1500.00	
Service Station Pumps, Tanks and Equipment	2000.00	
Autos and Trucks	2500.00	
Misc. Equipment	850.00	
Office Furniture and Fixtures	500.00	
Service Station (Bldg. No. 1) (Show Location-See Note)	3000.00	
Total Fixed Assets	22350.00	
Less: Reserve for Dep'r.	2000.00	
NET FIXED ASSETS		$ 20350.00
Deferred Assets (Prepaid Items)		
Prepaid Insurance	250.00	
Prepaid Rents, Etc.	150.00	
Prepaid Supplies and Expense	250.00	
Total Deferred Assets		650.00
TOTAL ASSETS		$ 33,198.68

LIABILITIES AND NET WORTH

Current Liabilities		
Notes Payable	6000.00	
Accounts Payable	2240.33	
Trade Acceptance Payable	2000.00	
State Tax Payable	30.00	
Coupons Outstanding	104.00	
Accrued Taxes, Interest, Etc.	375.00	
Total Current Liabilities		$ 10749.33
Other Liabilities (Deferred Items)		
Mortgages Payable	None	
Contracts Payable on Land	None	
Reserves		
Reserve for Doubtful Accounts	400.00	400.00
Net Worth		
Capital Account (Capital Stock) Issued or Capital Invested	20000.00	
Surplus (beginning of period)	2000.00	
Curent Profit and Loss	49.35	22049.35
TOTAL LIABILITIES AND NET WORTH		$ 33198.68

Note: When showing Service Station Values it is well to show location instead of your number as outside parties analyzing your statement would better visualize the value of it and better allocate it in their mind.

Although Other Liabilities in the Balance Sheet show no amounts we have shown them in this one for your guidance.
(If you have none—do not show at all.)

TODAY, the refiner and petroleum marketer who is realizing a greater profit from his business, is the one who is constantly keeping abreast of the times. He realizes that antiquated methods slow-up production, retard sales and reduce profits. So, he installs the most modern equipment, including Niagara Oil Meters for *accurately* and *dependably* measuring all gasoline and oil movements.

* * * *

If you would cut handling losses to a minimum, then install Niagara Oil Meters. They will measure your gasoline and oil at *every* point, and give you a complete check on every movement. Short measurement, over measurement, thefts, leaks . . . all show up in the meter reading. Automatic measurement conserves time and increases production.

No matter what branch of the petroleum industry you may be in, there are types and sizes of Niagara Oil Meters that will definitely meet your individual requirements. The coupon will bring you full information. Mail it today!

BUFFALO METER COMPANY
2889 Main Street, Buffalo, New York

Niagara Oil Meters

Vertical or Horizontal Dial

Sizes from ⅜ inch to 6 inches

Buffalo Meter Co., 2889 Main St., Buffalo, N. Y.

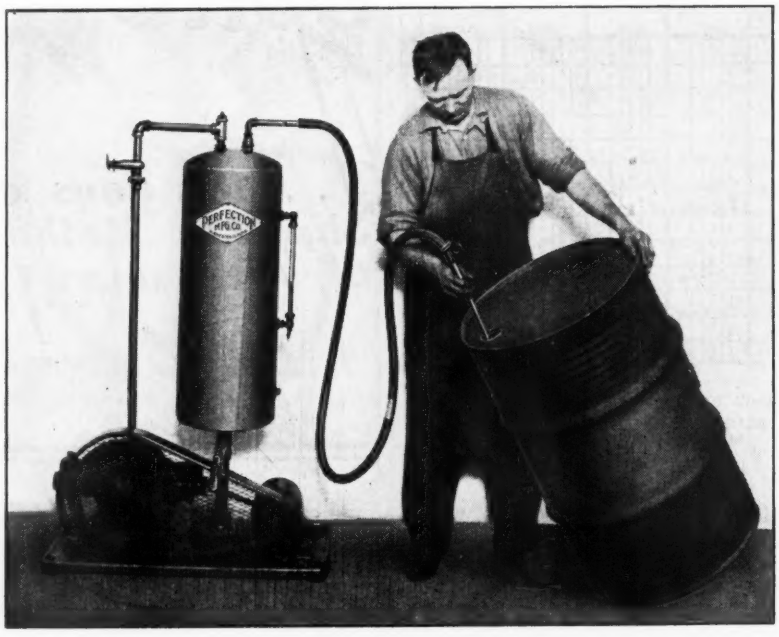
Please send us illustrated booklet and price list on Niagara Oil Meters.

Name.....

Type of Business.....

Address.....

How do YOU clean your Oil Drums?



The Perfection Vacuum System

Every oil jobber that wholesales Lube oils in drums has the problem of cleaning the oil drums that are returned. The Perfection Vacuum System provides a very efficient means for doing this at a very considerable saving in time and labor.

The Perfection Vacuum Pump has fourteen years of satisfactory service behind it. Every pump is guaranteed to produce at least twenty-five inches of vacuum.

This vacuum system, as illustrated, can be bolted to the floor or moved around as desired. It is equipped with a ¼ H. P. motor and can be connected up to any light socket.

Write for further information and prices.

Perfection Manufacturing Company
2194 East Hennepin Avenue Minneapolis, Minn.

The Importance of Filtration

ONE factor in regard to filtration stands out above all others.

Filtrates are perfectly clear.

This advantage alone makes filtration a desirable step for several places in refinery practice. For help on such matters, come to United Filters—known every where as filtration headquarters because of its many types of filters and its wide experience in filtration problems.

United Filters Corporation

Hazleton, Pa.—Los Angeles Office, Central Building
Other Offices in Chicago—New York—Salt Lake City
Export Office—25 Broadway, N. Y.—Code Address, Unifilter, New York

unit's sales and stock sheet or from the summary of them. This would enable you to determine the gross profit per unit. If you have numbered your selling units and carried out the numbering scheme throughout your records as explained with the Chart of Accounts in a previous article—your subsidiary accounts for the Direct Wholesale and Direct Retail Expense controlling accounts will show the amount of each classification of expense applicable to each selling unit under that division.

In this connection stock forms the same as shown for the Sales and Stock Sheets; namely the 30-column sheet affords a good sheet for the subsidiary accounts of Direct Wholesale or Retail Expenses. By using one double column for each month these sheets will record the subsidiary accounts for your selling units for one year as in Fig. 11.

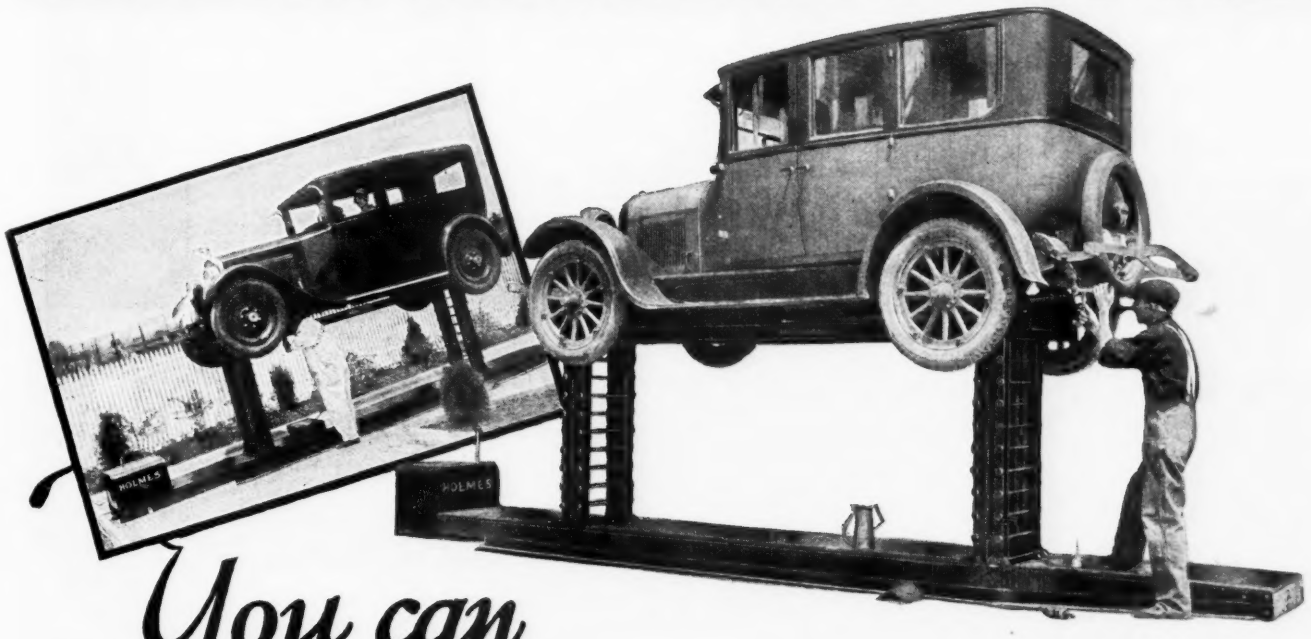
In addition to the reports and data we have shown in these articles there is an abundance of information which can be readily and easily secured from any system of accounts properly designed and religiously kept and followed. So many in fact that we could go on indefinitely showing various possibilities and then not touch upon the very point which you may have had in mind and wondered about.

It has not been our intention in these articles to present to you a perfect system of accounts and their application to your business. Quite to the contrary, we have endeavored to show our readers through actual forms and figures and explanations of them, just what can and should be accomplished from any system of accounting properly followed, and thereby place the management in a position to request suitable information from its employes as will enable it to safely guide their Ship into the Port of Industrial Success.

The author wishes to express his sincerest thanks to the following persons in the oil industry, who have through their ideas and inspirations, made it possible for him to present this series of articles for your consideration: William Clark, L. V. White Co., Kalamazoo, Mich.; A. S. Mathews, Theisen-Clemens Co., St. Joseph, Mich.; Al Dubisson, Wolverine Oil Co., South Haven, Mich., and W. J. Gerwe, Vacuum Oil Co., Chicago.

SHREVEPORT, April 12.—Horace Canon has been named salesmanager for the Root Refineries, Inc., with headquarters here. Until about a year ago Mr. Canon conducted a marketing business in Shreveport, later removing to Tulsa, then to Houston where he was salesmanager for Keen & Wolf Refining Co. until that plant was closed down recently. He became salesmanager for the Root Refineries, Inc. April 1.

Holmes Universal Auto-Lift



You can take it with you if you move

For the filling station operator who does not own his location, the Holmes Universal Auto Lift is ideal. It is shipped completely assembled with only the guide rails detached. There are no expensive pits to dig, no concrete work, no plumbing or air connections, no posts to erect, no assembly or installation cost. You don't even have to bolt it down. If you move, load the Holmes on a truck and take it along. You can have it operating again in your new location in approximately 30 minutes.

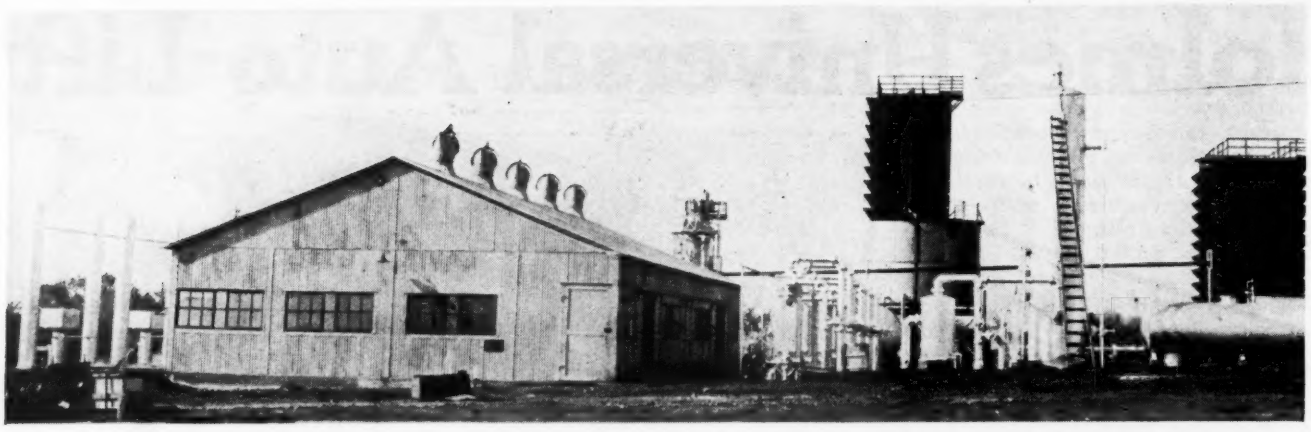
The Holmes Universal Auto Lift speeds up your service, increases your profits, and attracts new business. Cars are raised by front and rear axles, leaving all wheels, steering gear, and every working point instantly accessible for lubrication, washing, polishing or any service operation. Crankcase, clutch, transmission and differential—brakes, shackles, universals and springs are raised to a position where they can be serviced quickly and without useless effort.

The Holmes Universal Auto Lift is operated entirely by its own self-contained electric motor; and as there are no oil reservoirs, packing glands or air connections, the operation of this lift is in no way effected by weather or by failure of an overloaded or inefficient air compressor.

Write for descriptive folder
and complete information.

ERNEST HOLMES COMPANY

CHATTANOOGA TENNESSEE



General view of the Marshall, Okla., plant of the Roxana Petroleum Corp., taken as construction was nearing completion

Double Stabilizing Column Installed at New Roxana Plant in Logan County

By J. C. Chatfield
N. P. N. STAFF WRITER

Article 1

TULSA, April 14

ROXANA PETROLEUM CORP. has installed a double stabilizer at its new gasoline plant near Marshall in the Logan county, Oklahoma, field. The apparatus is of the De Brey type operating at high pressures. This is the type of stabilizer used at all Roxana plants which are equipped with fractionating columns.

With the aid of this double system of rectification the operators will be able to produce any grade of gasoline desired and in addition special cuts of liquefied petroleum gases. For example it will be possible to produce natural gasoline which would be entirely free from propane and a secondary product which would be very nearly, if not a chemically pure hydrocarbon fraction on a commercial scale if a market can be developed.

Events of the past two years have convinced many manufacturers of natural gasoline that they will be forced to market at least a part of their production as motor or aviation gasoline to the consuming trade. Through vapor recovery plants, cracking and better fractionation the refiners are manufacturing a volatile gasoline without the blending of naturals in great enough proportions to absorb the natural gasoline production of the country.

THE exporting of large quantities of stabilized natural gasoline, part of which has been shipped without blending, has done a great deal to absorb the surplus. But the outlet is insufficient still.

The construction of many of the modern automobile engines is a handicap to the natural gasoline industry in making a finished motor gasoline. Cars with heat on the manifold and other methods of assuring complete vaporization of heavy gasolines tend to cause gas locked carburetors under certain conditions.

Of the hydrocarbons normally included in natural gasoline there are two fractions which tend to cause the gas lock. One manufacturer recently referred to these two as being the "two bad boys of the Ane family —Prop Ane and But Ane." Propane boils at minus 49 degrees Fahr. and butane at plus 32 degrees Fahr. The next important fraction, pentane, boils at 97 degrees Fahr. which does not present difficulties when included in a motor fuel.

Most manufacturers have discovered that it is impossible to remove propane completely from natural gasoline with a single column stabilizer. Usually the best operation leaves from 1 to 2 per cent propane in the plant make.

It is possible to make a 90 per cent recovery grade Double A gasoline with a single stabilizer. But by adding a second column one manufacturer has found that the recovery of his product has jumped from 90 to 97 per cent, a recovery which will not be equalled by much of the straight run gasoline sold commercially.

A sample of double stabilized natural gasoline tested recently which was produced commercially showed the following distillation range:

	Degrees F.
Initial Boiling Point	68
10 Per cent	82
20 Per cent	92
30 Per cent	102
40 Per cent	112
50 Per cent	126
60 Per cent	138
70 Per cent	168
80 Per cent	180
90 Per cent	212
End point	282

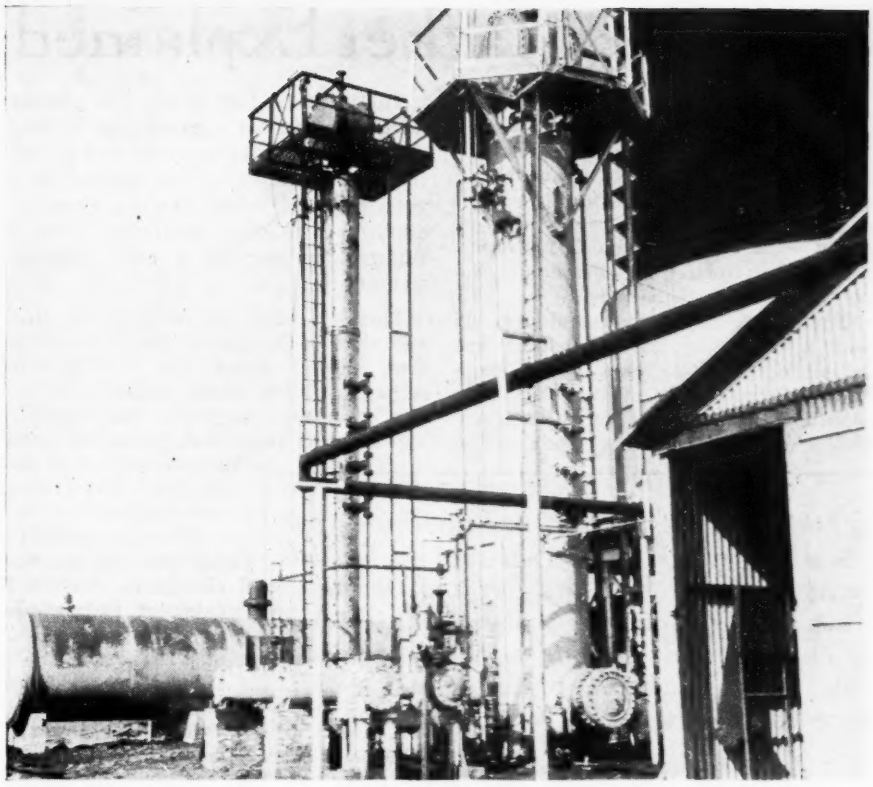
This sample gave a recovery of 96 per cent and exerted a vapor pressure of only 7½ pounds at 100 degrees Fahr.

At the Roxana plant near Marshall, the two stabilizers in brief consist of two bubble towers with steam coils at the base and water cooled condensers at the top. The two columns are arranged in series.

RAW GASOLINE from the plant's steam still is charged to the first stabilizer through two Braun heat exchangers counter-current to the hot stabilized gasoline being withdrawn from the bottom of the column. By a manifolding arrangement it is possible to vary the point at which the raw gasoline is introduced into the column. It may be charged over either the seventh, ninth, eleventh or thirteenth tray, counting from the bottom.

For inspection and experimental purposes each tray in the column is provided with a sample cock. There are 22 trays in each column. Pressure and temperature control devices are provided to keep the system working at optimum conditions.

Heat is applied to the Roxana columns through a steam coil passing



View of double stabilizer at the Marshall plant of the Roxana Petroleum Corp. showing high pressure storage tank in the background

through the bottom of the tower. The heat supplied by the steam vaporizes the lightest fractions in the gasoline surrounding the coils, the temperature being controlled to a point which will give a product of desired specification, in current practice usually a gasoline of Double A specifications with a recovery well above the 90 per cent minimum.

Vaporized fractions of the gasoline pass upwards through the column in contact with the descending raw gasoline and reflux and finally come to the water cooled condenser surmounting the column. Uncondensed vapors from the top of this condenser normally will be introduced into the residue gas line or popped off.

Condensate from the bottom of the condenser coil is trapped back to the weir plate at the top of the stabilizer and withdrawn for processing in the second column. It passes downward to an accumulator tank between the two columns.

A small steam pump picks up the light hydrocarbon mixture from the accumulator tank and pumps it to the second rectifying column. En route to the column the mixture passes through a heat exchanger and is introduced near the center of the column over the desired tray.

Although smaller in diameter because of the lesser volume of material handled, the secondary rectifier is almost identical with the first. The finished product of the column is withdrawn from the bottom and passed to pressure storage. It is robbed of part of its heat on the way to storage in the heat exchanger through which the incoming mixture is being passed. A second water cooled coil brings the temperature down further.

For pressure storage at the plant the operators have made use of an old style absorber shell which was formerly filled with wood grids. This has been tested for high pressures and is expected to be kept under a working pressure of 60 pounds per square inch when used for the storage of special highly volatile products such as butane.

In the second article to be published in an early issue of NATIONAL PETROLEUM NEWS will be given a description of a number of other unique features at the Roxana's new Marshall plant.

A. P. I. Tells 'Em About Costs

NEW YORK, Apr. 13.—A leaflet, giving the motoring public some idea of the scope of the industry supplying its gasoline and the costs of producing it, has been published by the American Petroleum Institute, under the direction of Trell W. Yocum, of the division of public relations. The leaflet is suitable for enclosing with mail matter or for distribution at filling stations.

The first leaflet is to acquaint the reader with the cost of gasoline production contrasted to its present low retail price. It tells the various process through which oil passes from well to filling station.

Additional leaflets will be prepared from time to time.

Notice Of Sale Of All And Singular Of The Assets Of American Refining Company, Inc.:

The undersigned as Receivers for the American Refining Company, Inc., will offer for sale and sell all of the assets of the American Refining Company, Inc., at public auction at the Court House door of Wichita County, Texas, at Wichita Falls, Texas, on the 5th day of May, A. D. 1928, beginning at 10:00 A.M. on said date.

Said properties consist of producing leases of royalties, real estate, a refinery of 6,000 barrels capacity, skimming plant, four Units Dubbs cracking system, two Units Cross cracking system, three hundred and forty-one tank cars, system of filling stations, stocks of merchandise, bonds, notes, stocks in pipe line companies owned by the American Refining Company, Inc., all accounts receivable, choses in action, cash on hand, a full and complete schedule of which is on file at the Receivers office in room 513 City National Bank Building, Wichita Falls, Texas, and any prospective purchaser is at liberty to inspect said schedule of assets. The sale will be conducted at public auction and will be for cash, except as to real estate and producing leases, which real estate and producing leases may be sold on part credit, provided fifty percent of the purchase price thereof be paid in cash, and twenty-five percent one year after date and twenty-five percent in two years, the deferred payments to bear six percent interest per annum with a lien upon said property to secure same. Said sale will be subject to confirmation and approval of the Court and five percent of the successful bid must be deposited with the Receivers on the date of sale.

Witness our hands this the 21st day of March, A. D. 1928

John W. Hooser
E. H. Eddleman
J. C. Mytinger

Receivers for
AMERICAN REFINING CO., Inc.

The Gasoline Tank Car Market Explained

No matter how comforting it may appear to be to contract on the spot market, every oil man before signing a contract, and by every oil man we mean both refiner and jobber, should first ascertain the extent of that spot market, if any; who is contributing to it and what his interest is in it, IF ANY.

We hear a lot in this day and age about "the market" of this, that and the other thing. We know of wheat, corn and cotton markets, of a stock market, and know they are all well organized and have a considerable volume of goods moving on them every day which movements are accurately recorded.

But what do we know about the market, in tank cars, for any particular product of petroleum?

It is a pleasing thing to contract "on the market." Then the price does not have to be discussed by seller or buyer. There is no "selling of the price" by the seller. In other words, there need be no haggling. Most people realize that in selling and buying, discussion of the price is the hardest thing in the whole deal, whether you are buying nuts or pianos. The battle doesn't really start until you get to the price. Then it is on.

But when you contract "on the market," you never get to the price, unless either one of the parties is trying to get a differential over or under the so-called market price. But as a usual thing the price does not figure in the "sale" that is based on a contract on "the market date of shipment."

So when you make this kind of a contract, whether you are refiner or jobber, it is only sound business to pause and try to determine just what is this market and who in that market makes the price that you will buy and sell on.

If you don't you may be rather surprised some day.

Is There Enough Volume Moving to Make a Real Market?

NATIONAL PETROLEUM NEWS has been urging, editorially, for several years, a more serious consideration of the so-called markets on which the industry undertakes to operate. It does not believe that many men realize just what they are, or are not.

The first thing to consider is, "Is IT —for whatever product—a real market?"

Is there enough stuff moving often enough on that "market" to cause it to be a substantial, stable affair?

Are enough men, both refiners and marketers, selling and building enough goods on that market every day, or every week if you would, to represent a fair opinion of competent people from the oil industry?

Take these points for a minute. If half a dozen or less companies are selling only a few cars a day each on a market, that means that only a half dozen or less marketers are buying only a car or two each a day on that market; that means that no more than a dozen or so people are expressing their opinion in a day as to what they think the price should be.

Then one might go still further and inquire—

Are these people, who are thus expressing their opinion, and that is what you are doing whether you are buying or selling, in a position to have a worthwhile opinion as to the market?

Are they following conditions closely enough to really know?

If most of the big jobbers and refiners are contracting all their stuff, and only appear in the market occasionally, then who is it that is expressing his opinion?

Is that the type of person whose opinion the others are willing to accept as to price?

Are you willing to delegate the making of the price in your contract, whether you are refiner or jobber, to some one else?

It is aside from the primary question, to argue that if you don't use this market, whatever it is, then what will you use?

The first question to be answered by you is, is this a satisfactory market, one which sound business would warrant me to contract on?

If you think it is, there is no more to be said.

But if you should think that it isn't then the next question would be, is there anything I can do that will make this a satisfactory market, or is there some other way in which I can contract?

Taking this last point first, many men have studied a great deal to find some other way to contract and so far they have failed. The matter then gets back to what can be done to make this market, whatever it is, a satisfactory market, a real, substantial affair.

There is only one way to do that and that is for many people to be in that market every day intelligently selling, and for many people to be in that market every day intelligently buying, and then that there be some accurate way of recording all these transactions.

We are not talking for an oil exchange for we don't think it is possible to make one work, and we have studied that considerably and talked with a great many people for a number of years about it. There are too many very practical reasons against an oil exchange to warrant going into them here.

But one can well ask is an exchange necessary if a reasonable amount of material is sold in existing so-called markets every day by a reasonable number of people, and if those transactions are accurately reported, which last is now being done?

To buy and sell more goods on the open tank car market would be more bother than to contract, but the question is would it not give a more stable market and would it not therefore be worth while?

If a large stable market were established would it not be easier to buy and sell more cars a day on it, than at present?

Let us add here again, that we have no interest in the matter beyond seeing that the industry knows what it is doing.

THIS is the third installment of the discussion on Tank Car Markets, which has been issued in booklet form by NATIONAL PETROLEUM NEWS *and the* OILGRAM. *Copies have been sent free to all refiners and jobbers. Any who may have been overlooked, we will appreciate their writing us. Or if additional copies of the booklet can be used we will be glad to supply them free of charge.*

—EDITOR.

RICHMOND, Va., Apr. 13.—Athletic and social activities to promote good feeling and fellowship among employes form the basis of the club which was organized recently by the Norfolk, Va. branch of the Standard Oil Co. of New Jersey.

Charles Hope was elected president of the Standard Athletic and Social club; W. C. Heusler, vice president; R. L. Scarborough, secretary and T. A. Oborne, treasurer.

The company now has a bowling team. Plans for a golf tournament are being worked out. As usual, the Standard will be represented on the baseball diamond this year and may affiliate with one of the commercial leagues.

Good Products at Low Cost

From Any Crude Available

Plan on which Marland Refinery Was Built as Told to
Paul Truesdell, N. P. N. Staff Writer

Article 2—Manufacture of Lubricating Oils

THIRTEEN shell stills comprise the lubricating oil battery of the Marland Refining Co. They run parallel and close to another battery of two pipe stills and 11 shell stills that comprise the crude battery and pressure distillate rerun battery, the crude side of which was described in Article 1 of this series. (Page 54, April 11 issue.)

The five stills, 18 to 22, inclusive, of the lube battery, are hooked up for continuous operation. The residuum is charged continuously from No. 6 still in the crude battery to No. 22 lube still. Very little heat is lost in making this transfer from battery to battery, due to the very short distance and a well insulated line.

The stills of this battery are equipped with vapor to oil heat exchangers, in which practically all of the naphtha contained in the dewaxed bright stock solution being charged to No. 23 and 24 bright stock reducing stills is vaporized.

The bottoms of cylinder stock from this battery of five continuous stills are pumped through two shell and tube exchangers, where it gives up its heat first to the raw wax distillate being charged to the rerunning stills and then to the incoming reduced crude charging to No. 22 still, the first of the battery of five.

The raw cylinder stock leaves No. 18 still at about 650 degrees Fahr. temperature and is reduced to 200 degrees Fahr. in passing through the exchangers. From the exchangers it passes through a set of coils where it is water cooled to about 140 degrees Fahr. enroute to storage.

The raw cylinder stock is then charged to 1000-barrel agitators where it is treated with sulfuric acid in varying amounts, depending on grade of stock required. After treatment, the acid sludge is drawn off, passing into separator kettles where about 70 per cent of the acid is recovered as weak acid of 24 degrees Be. gravity and is subsequently restored to 66 degrees Be. acid in a standard acid concentrating plant, or to lighter gravity for subsequent blending to 66 degrees Be. with purchased fuming sulfuric.

The remaining acid-treated oil, unneutralized, is delivered to the contact filtering plant where it is treated with finely ground fuller's earth in 60-barrel batches. The contact or mixing kettles are so arranged that while the oil is actually treated in batches, there is uninterrupted flow of oil through the department, thereby combining the advantages of both continuous and batch operation. After the clay is thoroughly mixed with the oil, the mixture is pumped through a pipe still where it is heated to about 350 degrees Fahr. temperature and passes on to a flash tower where all moisture is flashed off as steam.

WALTER MILLER
Director in charge of refining, Marland Refining Co., Ponca City, Okla.

The Marland company owns and operates its own clay deposit, which is located at Riverside, Texas, where clay both for contact and percolation filtering is prepared. This clay is not activated with acid.

The Marland company recently took out a license to operate under all of the patents owned by the Filtration Co., which is a holding company owning patents on contact filtering that have been issued to the Standard Oil Co. of California, the General Petroleum Co., John C. Black and James W. Weir. The patent arrangement which was entered into by these companies has been described in previous issues of the NATIONAL PETROLEUM NEWS.

The cylinder stock having been contact filtered and neutralized (the clay neutralizes the remaining traces of acid as well as decolorizes the oil) is diluted with naphtha to a mixture of about 70 per cent naphtha and 30 per cent oil. Then it is chilled down to about 10 degrees Fahr. below zero and charged to the centrifugal machines, of which there are 25. The chilling is done in 10 insulated tanks in conjunction with a tubular exchanger for cooling with water and a set of five standard double pipe chilling machines for brine cooling.

The cooling cycle of this product is interesting from an economy standpoint as the Marland company is producing about 900 barrels of bright stock daily with 120 tons of refrigeration, whereas considerably more artificial refrigeration would be required to do the same amount of work without this unique heat exchange system.

The oil and naphtha mixture enters this department in a continuous stream first passing through a set of tubular exchangers counter current to cooling water of 65 degrees Fahr. temperature. B.t.u. equivalent to about 50 tons of artificial refrigeration are removed at this point. A ton of refrigeration as all engineers know is the number of heat units required to melt one ton of ice at 32 degrees Fahr. temperature to water at 32 degrees Fahr. and is equivalent to 288,000 B.t.u.

AFTER passing this first or water cooled stage the oil enters the first one of a battery of seven tanks equipped with cooling coils, and flows continuously by gravity from tank to tank through what we will call the dewaxed or bright stock solution cooling stage. The cold oil from the centrifuges which is about zero when it leaves the machines, having lost considerable of its low temperature during the centrifuging operation, instead of going direct to a storage tank is pumped through the cooling coils of the seven tanks in continuous flow and counter current to the incoming oil.

In this exchange flow it picks up sufficient heat to account for another

Model 141 — to be operated with 1,800 speed electric motor.

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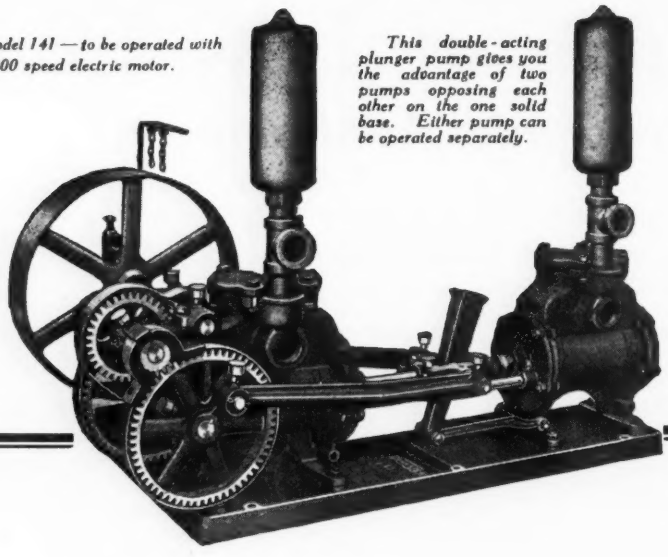

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large refrigeration equivalent in the consequent cooling of the incoming oil with which it exchanges on its way to the dewaxed oil storage tanks, reaching this resting place after being warmed to about 70 degrees Fahr.

The incoming oil passes from the last of the seven tanks in the dewaxed oil cooling stage through the three coil-equipped tanks and the double-pipe chilling machines.

The brine circulation is continuous and counter current to the oil flow in this last stage. The bright stock solution is then charged to No. 23 and No. 24 reducing stills of the lube battery; first passing through the heat exchangers as previously described in this article, where it is reduced to specification.

The ingenious development of means for using intensive heat exchange besides reducing cost of equipment and operation makes possible the processing of a very large amount of oil in a relatively small space. Condenser boxes are very small for the amount of oil handled.

The raw wax distillate as before stated is rerun to crack the amorphous wax and convert it to the crystalline state. Then it is chilled in standard double pipe chilling machines and filter pressed to remove the wax; this pressing or wax separation being in two stages—the first pressing at 45 degrees Fahr. and the second or final stage at 5 degrees Fahr.

This double pressing is done because of the high wax content of the distillate and to give better control of the cold test of the pressed distillate, which means better control of the light lubricating oils. The pressed oil from the cold presses is passed through a heat exchanger counter current to the incoming warm oil, leaving the department at about 60 degrees Fahr. Here again Marland traps a few B.t.u. In fact wasted B.t.u. seem very few and far between in the whole Marland refinery.

The neutral oils or light lubricating stocks are first treated and contacted and then filtered in the conventional way through percolating filters. The plant has a Wedge furnace for roasting clay and restoring it to practically new condition.

This Wedge furnace is a multiple hearth unit into which the spent clay is introduced at the top and is drawn down onto the topmost hearth at a predetermined rate by a scraper. The furnace is fired by gas burners in the sides and it revolves very slowly, driven by a motor.

The clay is evenly spread over each hearth by slow moving arms and as the scrapers go around the clay is slowly turned over and over on each hearth and is continually dropped in small volume from one hearth to another, falling at last into a receiving bin, whence it is picked

up by a bucket conveyor, carried continuously to a receiving cooler, whence it falls onto a belt conveyor and is carried to clay storage bins in the top of the filter house. The Wedge furnace replaces two rotary roasters of the type used in portland cement plants.

The plant has 24 ten-ton filters arranged in two rows in the filter house. Down the center of the house on the upper floor runs a car on a little track; on this car is mounted hopper and spout, and directly above the track are the outlets of the hoppers where the clay is stored. Thus in charging the filters with clay, the little car with its hopper is placed in position, the movable spout placed in the manhole of the filter, the hopper outlet opened and the filter is quickly charged by gravity.

One feature of the Marland plant is that there are to be found there, probably the largest filters in use anywhere. These filters, of which there are six, hold 50 to 60 tons of fuller's earth each. Their history is quite interesting. Several years ago the demand made on the refinery for lubricating oil was suddenly greatly increased, which demand called for increased filter capacity at once.

To furnish this additional capacity required lots of money and considerable time to buy and install the conventional standard equipment. Refinery operating heads located several old shells that had served their usefulness in pressure distillation and were not safe to operate under high pressure at high temperature.

Figuring by the engineers showed that these stills could be bought, moved to the filter house and set on end at very much less cost than new filters could be bought and installed. The only argument against their use was the size, as it was generally understood by lubricating oil men that a 25-ton filter was about as big as it was practical to operate, very few larger than this being in use.

This did not scare the Marland men and they set the six big stills on end, mounting them on a solid platform supported on sturdy concrete and steel piers. The cost of the installation was about one-third of the cost of installing the small 7½-foot diameter filters. It gave the required capacity and was ready in time to supply the oil as required. The stills used came within the orthodox maximum diameter limit of 10 to 11 feet.

The Marland company makes its own motor oils by blending and compounding bright stocks of its own manufacture with neutral oils that are likewise made in its own plant as described.

NEW YORK.—John G. Thieringer, secretary of Hartol Products Corp. here, died on April 4.

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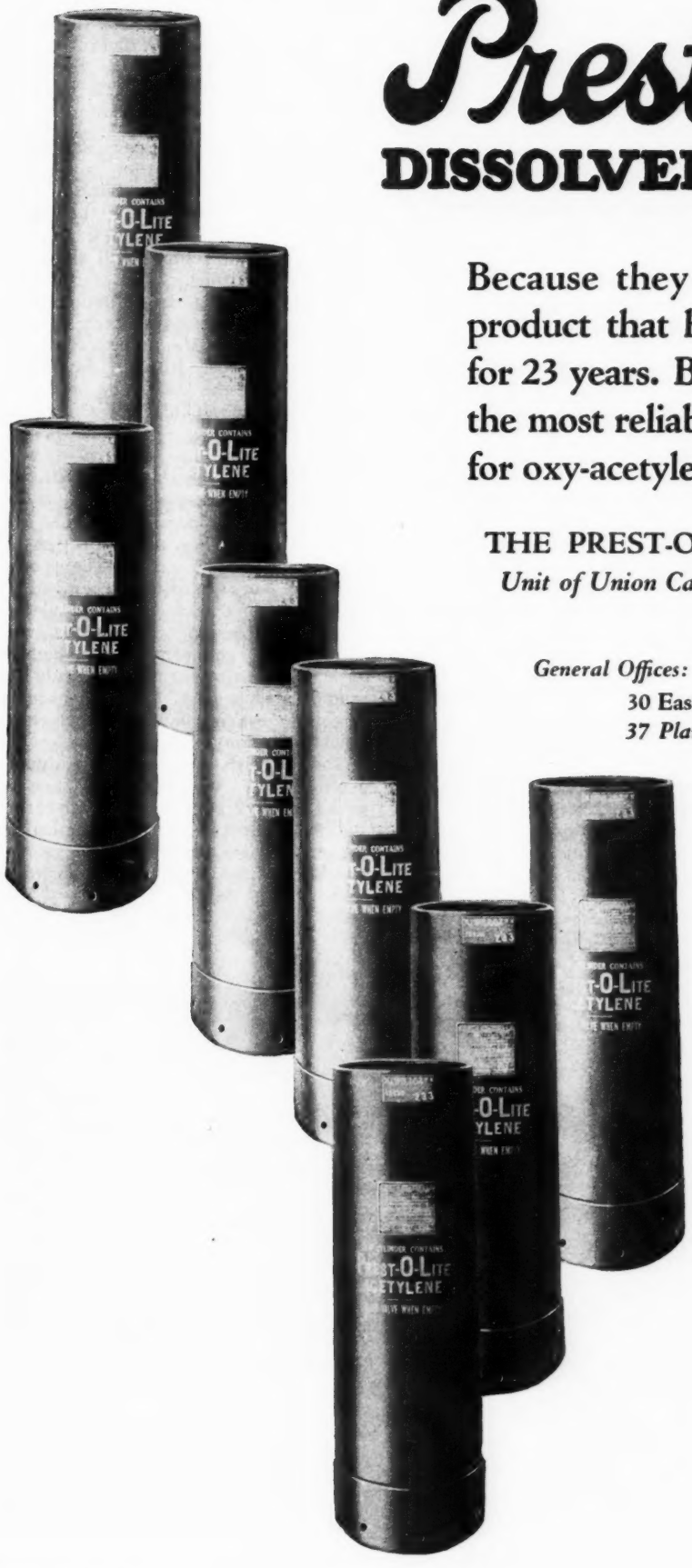

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Hydrogen Sulfide Field Problems Still Unsolved in West Texas Region

By Paul Wagner
N. P. N. STAFF WRITER

AFFINITY of hydrogen sulfide gas for metals continues to prove a problem for the petroleum industry in dealing with production from the west Texas sulfur crude areas. This statement applies to the Permian salt basin province, west and northwest of San Angelo, and to a lesser extent to the Amarillo district of the Panhandle.

Efforts to reduce corrosion of lines, tanks and fittings have resulted in little of permanent value so far, a first-hand investigation of field conditions shows. Consequently, frequent replacements of equipment are necessary.

Until now the damage has been mainly to surface equipment, although fear is expressed in field quarters that eventually casing strings in the wells will corrode. As casing corrosion will take place principally from the outside it may not become apparent until the full damage of pitting has resulted.

Then the problem of repair work will be of paramount importance, calling for the working over of wells; and, perhaps, the forcing of oil mud into the interstices of top water formations above the oil pays to effect a seal through its natural expansive qualities against further corrosive action.

Conditions of corrosion are found to be somewhat different from field to field. Hydrogen sulfide gas, or sulfur content oils, react differently to contact with water and oxygen; producing strong or weak corrosive solutions in proportion to varying percentages of chemicals in the oil and gas.

Studies have shown it is not always the oils of highest sulfur content, or the gases containing the greatest percentage of hydrogen sulfide concentration, that work the most damage to equipment. In general, however, the variation involves only the degree of corrosive action. Results are broadly similar in all fields.

Analyses of gases given by the United States Bureau of Mines in a report of investigation, Serial No. 2847, show the following hydrogen sulfide contents from wells in the west Texas fields mentioned, in terms of per cent by volume:

Field	Per Cent
Panhandle (Big Lime)	0.50- 0.65
Big Lake (Reagan Co.)	10.00
McCamey District (Crane-Upton Cos.)	6.00
University-McElroy (Crane Co.)	8.00-12.00

An average of 5.75 per cent hydrogen sulfide concentration is reported from Yates field, Pecos county.

"It is very likely," says the Bureau of Mines report, "that new fields in these and other regions will show similar concentrations. This statement is borne out in the deep lime development area of southeastern Howard county, where Magnolia Petroleum Co.'s No. 1 Dora Roberts, in W&NW sec. 136 was the discovery well; also in the Hendricks field of Winkler county.

TWO gases, both acidulous in character, are responsible for attacks on surface equipment in the west Texas fields. They are hydrogen sulfide and carbonic acid. Their effect is found both in direct chemical reaction and in the inducing of electrochemical corrosion. Both gases, when emitted into the atmosphere, combine with moisture to form weak acids that readily attack all metals, and especially copper bearing materials, which are quickly destroyed.

The tarnish that rapidly appears after copper, lead or silver are exposed to hydrogen sulfide, represents the first effect of direct chemical reaction. Later, pitting and surface metallic oxides appear. Corrosion of

Under side of dome cover showing iron sulfide scale

View of dome of bolted steel tanks in Colorado, Texas, field

iron, which is more resistant to attack than brass or copper materials, comes from electro-chemical reaction due to differences in galvanic potential between metals. That metal which is electro-negative to the other attracts positively charged substances of the last mentioned, bringing about decomposition.

It is apparent, therefore, that replacement of bronze fittings with iron or steel will retard simple chemical corrosion and avoid, in part, the electro-chemical action that takes place when there is such a difference of galvanic potential as between iron and brass. Unalloyed ferric metals, such as cast iron, wrought iron, cast steel and steel are resistant to attack in the order named.

An influence against electrolytic corrosion of treating tanks results from suspension in them of a few sheets of zinc insulated from each other and from the tank walls, but connected together at their tops with soldered copper wire, the assembly being similarly connected to the tank to form a closed electrical circuit.

The burning of hydrogen sulfide gas at flares in west Texas fields, where it has been found impracticable to attempt recovery of casinghead products, results in the settling of chemical compounds on nearby equipment; augmenting the effect of the natural corrosive qualities in the gas. Polished or smooth exposed surfaces are the most readily attacked.

Protective greases will allay corrosion somewhat, wire lines should be kept thoroughly lubricated and copper-bearing metals replaced wherever possible.

GAS-SCRUBBERS for taking out hydrogen sulfide have been installed in the University field for the purification of sufficient fuel to fill the needs of camp and boiler purposes. There has been no attempt, however, to operate similar installations on a larger scale. Virtually all these scrubber plants use caustic soda solution and operate on the same general principle.

The treating plant of the Tidal Oil Co. of Texas, consists of a scrubbing tank constructed from a 24-foot joint of 15-inch casing. A 4½-inch connection is welded in at the closed upper end. Baffles are welded into the scrubber tank, for six feet from the top, to change the direction of gas flow as it travels upward. An inlet from the soda solution tank is connected six feet from the top. Gas enters the scrubber at the bottom, bubbles up through six feet of soda solution and goes out around the baffles.

Fuel provided by purification plants of the general character of those mentioned have solved the gas engine problem. Electricity supplied by the west Texas Utilities Co., which has provided current for use in most of the west Texas fields, fills the need for power for other purposes. Drilling, however, continues to be mainly carried forward with gas engines. Few steam boilers are used.

Deck of 1000 barrel capacity bolted tanks in the Orange, Texas, field

Galvanized wrought iron tubing is coming into use as a precaution against corrosion in well equipment and the suggestion has been made that a coating of pure zinc, which is electro-positive to iron, will also protect similar equipment. Greater life of wire lines also has been found to result from the use of those made of galvanized material.

Wood roofed tanks thoroughly grounded to offset lightning hazards are favored as against those with steel coverings. Aluminum nails are generally used in building these tops, which are made as nearly gas tight as possible for this type of construction. Tops, sides and bottoms of the tanks, in many instances, are being coated with special non-conducting paints. These at least reduce corrosive action when properly applied, although it is recommended that the steel be sand-blasted to remove rust films on the surface and in pits of the metal.

Little, if any, corrosion has been found on the sides of tanks from the oil level to the b.s. line at the bottom, except where scale breaks through and comes in contact with metal. Sulfuric acid formed by contact of oil and gas vapors with water and oxygen in the air attack tanks mainly from the top to the oil level. Scale dropping off forms iron sulfide, which also gives trouble by setting up galvanic action similar to that of a storage battery.

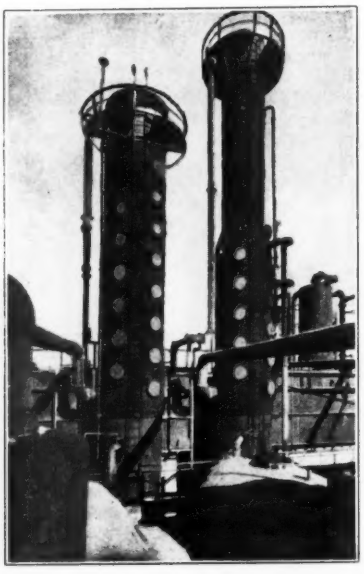
The use of asphalt or other non-conductor in the bottom of a tank prevents galvanic action and, consequently, avoids corrosion of reservoir bottoms. In using asphalt, it is customary to place a 6-inch cushion of water above it to prevent dissolving action of the oil.

General characteristics of hydrogen sulfide (H_2S) are given in Bureau of Mines report, serial No. 2847, which refers to it as forming an "explosive mixture with air, the lower limit of complete flammability being 5.9 per cent H_2S and the upper limit 27.2 per cent.

"The products of complete combustion are sulfur dioxide (SO_2) and water vapor. Hydrogen sulfide is an 'acid' gas, soluble in water. At 32 degrees Fahr., one volume of water absorbs 4.37 volumes of H_2S. It becomes less soluble as the temperature is raised, until at 104 degrees Fahr., only 1.86 volumes of the gas are absorbed by one volume of water. If the solution is boiled or aerated all the gas may be driven off.

"TESTS have been made to determine the solubility of hydrogen sulfide in petroleum oils. The sample of crude which was used had a gravity of 20.8 degrees A. P. I. and contained 3.77 per cent sulfur. The gas in the container above the oil showed from 0.63 to 0.80 per cent H_2S. In making the test of 2000 c.c. sample of the oil was saturated with H_2S gas and a gentle current of air at room temperature was passed over the surface of the oil. During the first 7.5 hours, 1911 c.c. (24.5 per cent of the total H_2S) were given off. At the end of 81 hours (effective time) 7,424 c.c. of H_2S had been given off. This amount represented 95 per cent of the total H_2S. Further tests on the H_2S remaining in the oil, made by bubbling air through the oil, indicated that the total H_2S in solution was 7,814 c.c. and would require 120 hours for its complete removal. Agitation or aeration would

BUBBLE TOWERS



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have increased the rate of giving up the gas. . . .

"This test shows that oils will lose much of their free H_2S if allowed to stand exposed in the air, and in a system that is not vapor tight, there will be an appreciable decrease in the amount of dissolved H_2S from the time the oil leaves the well until it reaches the refinery. But open storage and mechanical aeration cause evaporation losses of valuable light hydrocarbons. Therefore, this procedure does not suggest an economical way of ridding the oil of its hydrogen sulfide."

New Patents

April 3, 1928

REFINING

Fire Still and Oil Treater—Forrest E. Gilmore, Los Angeles, Calif., assignor to Forrest E. Gilmore Company, Portland, Oreg. Filed Feb. 4, 1926. No. 1,664,920.

Art of Distilling Lubricating Oils—Richard W. Hanna, Piedmont, Calif., assignor to Standard Oil Company, of California, San Francisco, Calif. Filed Oct. 4, 1923. No. 1,664,977.

Cooling Tower—Edward W. Cooke, Los Angeles, Calif., assignor to Edward I. Field, Los Angeles, Calif. Filed Apr. 27, 1927. No. 1,665,022.

Neutralizing Treatment of Acid Oils for Lubricant Stocks—George F. Olsen, Los Angeles, Calif., assignor to General Petroleum Corporation of California. Filed Aug. 31, 1926. No. 1,665,110.

Treatment of Lubricant Stocks—George Frederic Olsen, Los Angeles, Calif., assignor to General Petroleum Corporation of California, Los Angeles, Calif. Filed Oct. 15, 1927. No. 1,665,111.

Separation of Acid-Sludge Emulsions—Ernest W. Roth, Los Angeles, Calif., assignor to General Petroleum Corporation of California, Los Angeles, Calif. Filed April 13, 1927. No. 1,665,189.

Hydrolysis of Acid Sludge—Ernest W. Roth, Los Angeles, Calif., assignor to General Petroleum Corporation of California, Los Angeles, Calif. Filed April 13, 1927. No. 1,665,190.

PRODUCTION

Casing Elevator—Gustavus A. Montgomery, Titusville, Pa. Filed Sept. 15, 1925. No. 1,664,461.

Rotary Drill Bit of the Flat-Blade Type—Clarence E. Reed, Wichita, Kans. Filed Nov. 5, 1925. No. 1,664,528.

Capping Device for Oil Wells—Chester A. Rasmussen, Long Beach, Calif. Filed June 28, 1926. No. 1,664,643.

Perforated Casing—David N. Brundy, Los Angeles, Calif. Filed Feb. 2, 1926. No. 1,664,734.

Method of Welding Bearing Pins to Legs of Drill Bits—Hall H. Holdaway, Long Beach, Calif. Filed June 22, 1926. No. 1,664,883.

NATURAL GAS

Production of Helium from Natural Gas—Pierre E. Haynes, Buffalo, N. Y., assignor to The Linde Air Products Company. Filed Aug. 7, 1919. No. 1,664,412.

Process for Making Ice Crystals—Samuel C. Carney, Tulsa, Okla., assignor to Roxana Petroleum Corporation. Filed Feb. 4, 1926. No. 1,664,850.

Gas Purification—Joseph Becker, Pittsburgh, Pa., assignor to The Koppers Company. Filed Jan. 22, 1927. No. 1,665,013.

MISCELLANEOUS

Apparatus for Absorbing Fluids from Gases—Emil Piron, New York, N. Y., assignor to Piron Coal Distillation Systems, Inc., New York, N. Y. Filed Sept. 30, 1921. No. 1,664,483.

Method of Removing Tar from Gases—Emil Piron, New York, N. Y., assignor to Piron Coal Distillation Systems, Inc., New York, N. Y. Filed March 25, 1925. No. 1,664,484.

Process of Manufacturing Fuel Briquettes—Albert L. Stillman, Plainfield, N. J., assignor to The General Fuel Briquette Corporation, New York, N. Y. Filed Jan. 21, 1927. No. 1,664,998.

Floating Deck for Oil Tanks or The Like—Charles R. Gallagher, Los Angeles, Calif., assignor to Universal Holding Company, Los Angeles, Calif. Filed June 12, 1926. No. 1,665,163.

Home Study Course in Salesmanship For Wadhams' Station Men

MILWAUKEE, April 16

WADHAMS OIL CO. of Milwaukee has about 400 service station men busy every evening with a home study course, trying to make better salesmen of themselves. La Salle Extension University of Chicago, after exhaustive study in collaboration with company officials (and oil technologists designated by them) developed the training course. They also wrote the text books, ten in number, and now they are grading the papers submitted by the men.

The students themselves are putting up the money for the education at the nominal rate of $2 a text book. Each text is supposed to be finished in two weeks, so the course costs each student $1 a week for 20 weeks, a $2 deduction being made from ten successive pay checks.

However, as further encouragement to succeed, the company agrees to return the $20 to each man when and if he graduates.

Wadhams jobbers also are buying the course for themselves and their employes paying the company's actual cost, which is higher.

It is still too early to talk about results, in so far as they may improve gallonage or profits. Not one man has graduated yet. The most advanced are working on the seventh lesson. There have been encouraging indications, to be sure.

Customers have commented on the improved service at Wadhams stations. None of the comments were solicited and some of them came by letter or unexpectedly in the course of telephone conversations.

Each text book, according to arrangement, contains two subjects—two lessons. In every case, one of the lessons is on a general topic which would be of value to any sort of a salesman, and one is on a technical subject that any employe of an oil company might well study, whether a salesman or not.

Subjects in the first book are (1) A Plan That Wins, and (2) What Do You Know About Oil? The second book gets quickly into the main issue with (1) Opportunities as a Service Station Man, and (2) The Functions of Oil. The third book takes on specific interest with (1) Forty-Eight Years of Successful Experience and (2) Evils of Improper Lubrication.

The fourth book begins to require some thought. It contains (1) Developing a Service Personality and (2) Wadhams Tempered Motor Oil and Service Guide. The fifth book gets into higher education with (1) The Mind of Your Customer and (2) Lubrication Systems. Text six gets into the "how" of things with (1) Awakening Buying Interest and (2) Piston and Ring Seal.

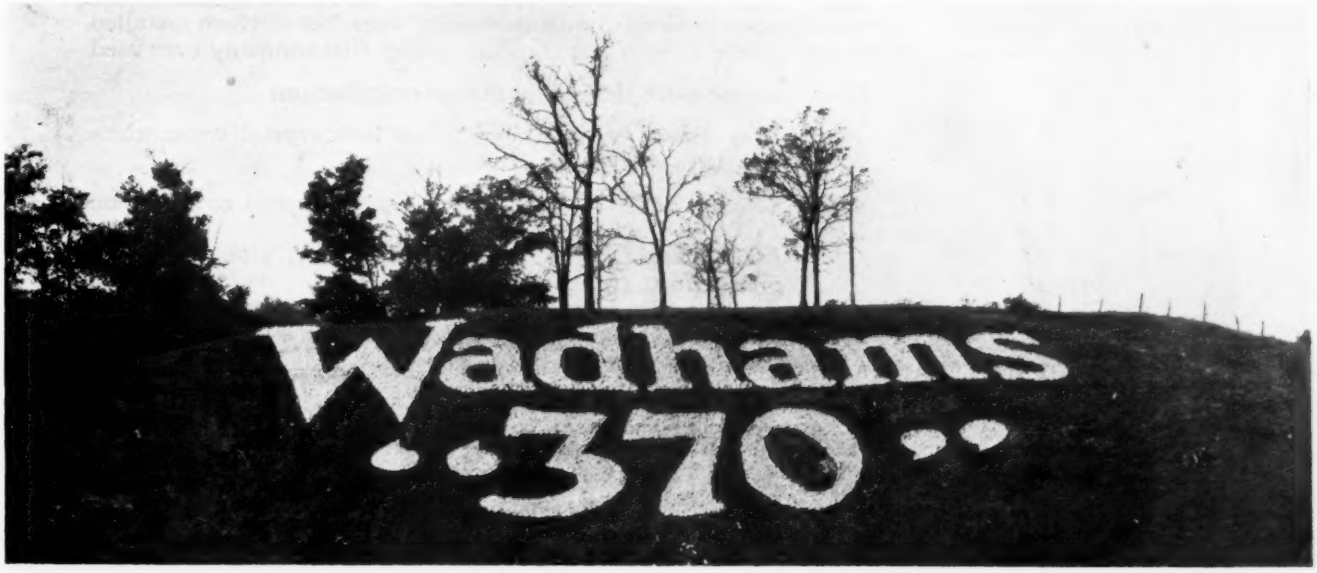
The seventh text talks (1) about Building up Customer Confidence and (2) about Carbon. And the eighth book gets into the matter of detonation.

"Wadhams Oil Co. had four primary purposes for going into this thing with a considerable initial expenditure," said H. W. Dodge, executive vice president of the company.

"Two of the purposes are for immediate return and two for the future. Three are for our own good and one is more or less altruistic; and here they are:

"First: We expect this to bring us increased sales, (a) by building up enthusiasm in the sale force. Happy men with a love of accomplishment and a hope for the future will put more vigor into their work. And (b) it will increase sales by building up consumer confidence. The buyer of anything expects the seller to know something about it. He expects his questions about merchandise to be answered intelligently by the salesman.

"Second: We expect to effect economies through this teaching. (a) There will be less turnover in the sales personnel. The men will be worth more to the company and will receive more pay accordingly. With more pay they will be better satisfied and will stay longer. (b) We expect the men to be taught a respect for materials that will bring about a saving through less waste

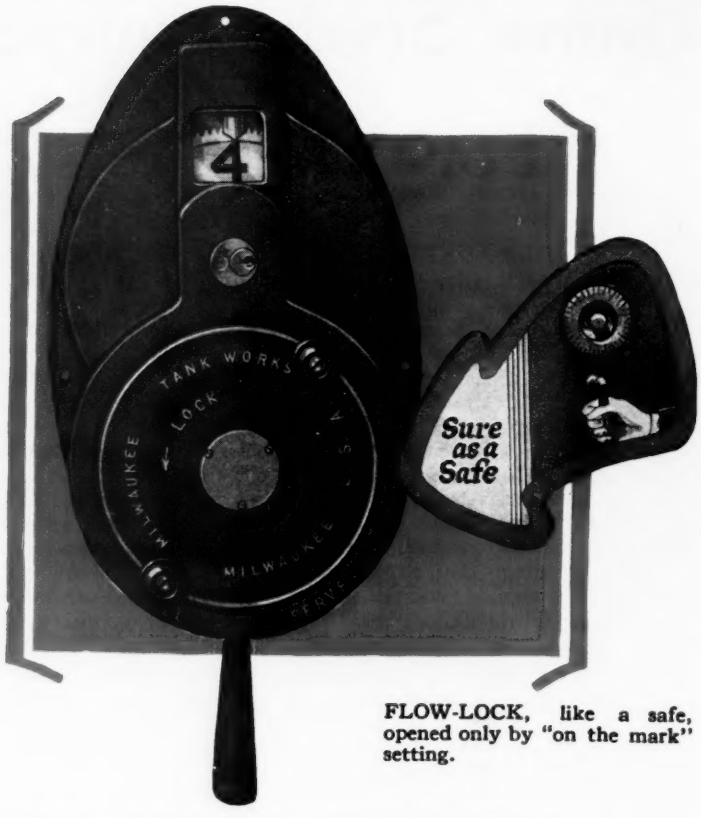


Wadhams Oil Co. of Milwaukee is weaving its advertising into the landscape of Wisconsin. The above is a piece of work done by the company's constuction department on the highway between Milwuukee and Madison

The sign is 115 feet long. The "W" is 30 feet high. The characters are beds of small rock, kept fresh with cold water paint, yellow in winter and white in summer. It is lighted at night with hidden reflectors

The hillside is leased. The farmer who owns it can still use it for pasture. His contract makes him responsible for having the weeds pulled in summer and the snow swept in winter. Search has proven to the company that good locations are scarce

What is "compelled accuracy"?



FLOW-LOCK, like a safe, opened only by "on the mark" setting.

1. No pump that serves gasoline, if the Sliding Indicator is only slightly off the mark, is compulsory-accurate.
2. A pump that will NOT serve gasoline UNLESS the Sliding Indicator is exactly ON the mark IS compulsory-accurate.

MILWAUKEE Simplified Visibles are unlocked for serving only when, in turning the hand wheel, the triggers CLICK into position. In that position of Exact Accuracy, gasoline may be served—in no other, even if only an eighth of an inch off. Of course, you can't pump into bowl while serving. Top down serving sells the extra gallons.

FLOW-LOCK Visibles (Hand or Motor Driven) prevent station losses, relieve attendants from unjust accusations, and in the experience of one oil company having over 700 of them installed, carry a *lower upkeep cost* than any pump that company ever used.

They cost no more than plain pumps or imitations.

Astral Glass Bowls make Cracked Gas look crystal water-white. White gas stays white.

Trim, "Major-General" appearance—simple, rugged construction.

FOR PERMANENT SATISFACTION, slow depreciation, this pump has no equal. Write today for complete catalog. Start to obtain the most perfect pump satisfaction, and real value for small cost.

MILWAUKEE TANK WORKS

F O U N D E D 1 9 1 1

MILWAUKEE, WIS.

Wadhams Oil Company

and

La Salle Extension University

SERVICE STATION SALESMANSHIP COURSE

HONOR PLEDGE

IN CONSIDERATION of my relationship with the WADHAMS OIL COMPANY and because I want to make the most of my opportunities and privileges;

AND FURTHER, because I desire to make the WADHAMS OIL COMPANY training investment highly profitable to my station and to myself, I agree with enthusiasm;

1. To undertake this course of training heartily and with an open mind,
2. To study faithfully the text material assigned and answer quiz papers fully,
3. To apply daily, in my work, to the best of my ability; the principles and practice developed in this course.

I understand the WADHAMS OIL COMPANY shall charge me with the cost of this course at the rate of $1.00 a week for a total of twenty weeks. This charge to be deducted at the rate of Two Dollars ($2.00) each salary check. Such money to be refunded to me upon my satisfactory completion of the course.

Name _____

Home Address _____

City _____

Dept. _____

Station _____

Approved _____

RETURN BOTH COPIES TO GENERAL OFFICE

The Honor Pledge signed by employees of Wadhams Oil Co., Milwaukee, who enroll in the Wadhams Oil Co. and La Salle Extension University correspondence course

and less breakage and loss through carelessness.

"Third: We expect to enhance the company's future. As we improve the quality of our man power we become a greater institution. Furthermore good men attract good men. We will be able to employ a higher class of individual in the first place and our personnel will improve at the source. With a program like that we can bring up our own executives. Naturally a man makes the Wadhams Oil Co. a better executive if he has a background of training in the Wadhams organization.

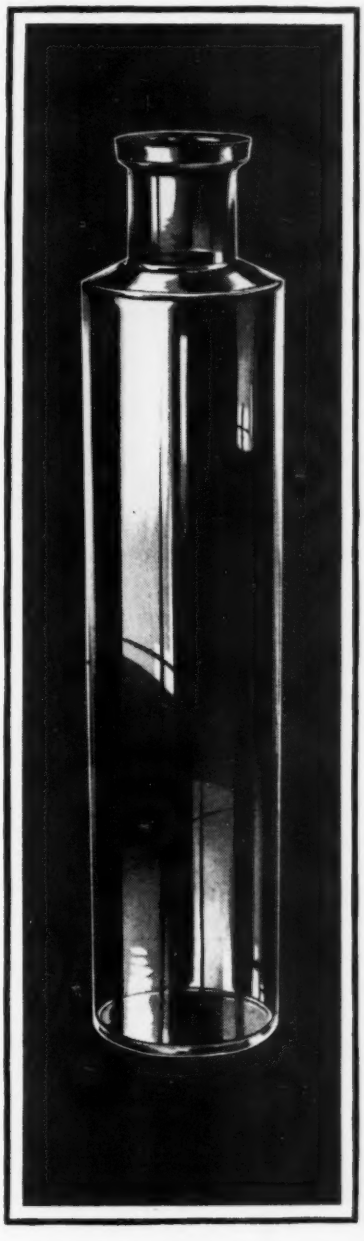
"This company could actually use a high-priced man right now. We need one; or maybe I should say we need three and have only two. And the two are doing the work of three.

"We have some good men inside who might handle the job but we cannot spare them. We have some branch managers who could handle the job but it would not interest them because they make more money where they are. We could go out and employ a good man but we would have to wait too long for him to develop the Wadhams spirit and learn the Wadhams principles.

"We have a lot of men in the organization who are good men where they are, but they are not ready for this promotion. We want our training course to eliminate problems like this so we can have 'runners up' equal to better jobs.

"The fourth and least selfish purpose is for the industry at large. The oil industry has suffered for want of salesmanship. The Wadhams Oil Co. is willing to pioneer (experiment, if anybody wants to call it that) in the field of better merchandising in the oil industry.

"Some of our competitors may want to follow our example. Certainly the La Salle Extension Uni-



SAMPLE
OIL BOTTLES

A neck that holds the cork with bull dog grip. Handsome squared shoulders. Ground and polished bottoms. Sturdy glass, crystal clear, distortionless.

Here are the qualities and the bottles that will give your product more than an even break.

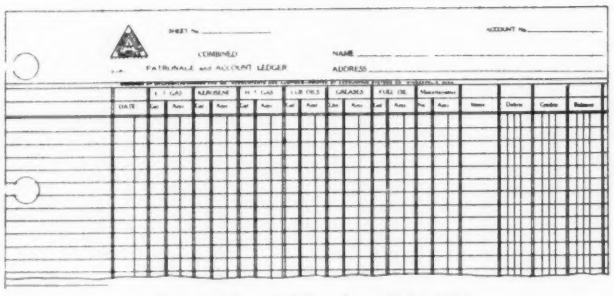
2, 4 and 8 oz. sizes.
Sample on request.

Illinois Glass Co.
Alton Ill.
ESTABLISHED 1873

YOU HAVE NEVER SEEN THIS FORM BEFORE!

Look* at It *Now

SAVES TIME



SAVES MONEY

Standard Size and Punching, 9¼ x 11⅞
Made from Hammermill Ledger Paper

The most practical form yet devised for accounts receivable ledger.

Only one line for each sales slip.

Also customer's total purchases at a glance on either gallonage or dollars and cents basis.

PRICES

$1.70 per 100 for 500 sheet lots
2.00 per 100 for 100 sheet lots

Further discount on lots over 500 sheets

Postage prepaid on all cash orders
Duty on foreign orders extra

ORDER NOW

ACCOUNTING SYSTEMS CO.

Specialists in Printing all Types of Forms for Oil Jobbers

413 South Fifth Street **Minneapolis, Minn.**

Descriptive Circular Upon Request

"500,000"

It is conservatively estimated that fully 500,000 Youngstown Tanks are in service throughout this and other countries. With such a background the tank buyer may be assured of the fidelity of the 5-year guarantee which accompanies his purchase.

Youngstown builds in all sizes for all purposes and in all types.

Write for a free copy of Bulletin No. 15.

The Youngstown Boiler & Tank Co.
Youngstown, Ohio

Offices in Principal Cities

Youngstown TANKS
"KEENE STANDARDIZED MADE"

versity is not likely to quit when they finish this job for us. They may rightly want to capitalize on their research and investment by developing similar courses for other oil companies. Indirectly Wadhams Oil Co. will benefit from that too."

Nobody in the Wadhams organization is willing to say where the germ of the idea originated. Once at an executive conference of Wadhams officials more than a year ago, when the subject of sales resistance created by increasing competition was being discussed, the question of a training course for service station salesmen came up.

It had been agreed that three main factors entered into the motorist's choice of oil and gasoline, viz., quality of the product, location of the station and the nature of the service received.

The executives believed they were doing what they could toward giving the public a quality product. They had spared no expense in research to learn what was good and to make it or buy it for their trade. The real estate department, they believed, was doing a very satisfactory job in choosing, buying and improving good locations where Wadhams products might be made available to the public.

Besides, the company was, and had been, appropriating a generous outlay to advertising every year and the expenditure was being supervised intelligently. But these men agreed that, however well organized, this machine might do a great deal of work in vain if the "cutting edge" were dull.

The service station salesman is this "cutting edge." He is the contact with the public and the intake through which most of the money comes into most any oil marketing business. The problem was to brighten this point of contact and make it more effective.

More intimately, the task in hand was to reach the responsive chord in nearly 500 service station men working at 300 scattered stations in a territory of 300 square miles.

Already these men had a sales manual of 250 pages, with the company's products and policies printed in it.

Already they were getting letters from headquarters on selling—how to dress, how to talk, how to treat customers, etc., but somehow they were not getting it.

The executives did not believe their men were any worse than service station men generally; in fact they knew them to be a great deal better than some. But there was room for improvement.

Some of these men were making about $120 a month and did not promise ever to be worth much more. They could not afford to keep a man on such a job if he proved himself worth $250 but they knew a service station ought to earn $150 a month

There Are None Finer Than CHAMPLIN "Straight Runs"

56-58 CHAMPLIN Straight Run, under 450 end
58-60 CHAMPLIN Straight Run, under 450 end
58-60 CHAMPLIN Straight Run New Navy, under 437
60-62 CHAMPLIN Straight Run, under 400 end
64-66 CHAMPLIN Straight Run, under 375 end
68-70 CHAMPLIN Straight Run, under 360 end

CHAMPLIN Straight Run Gasolines are known to the trade as gasolines of the highest attainable quality. Refined from high-gravity, sulphur-free, paraffin base crude, they are treated without acid and are absolutely acid-free and non-corrosive. Jobbers find CHAMPLIN Gasolines the kind that hold old customers and gain new ones.

"CHAMPLIN Oils Have Always Been Good—ALL WAYS"

CHAMPLIN Motor Oils are of unsurpassed quality.

USE CHAMPLIN OILS

CHAMPLIN REFINING COMPANY ~ *Enid, Okla.*

PROFIT
What Is It?

Does it mean merely buying oil at one price and selling it at another? Supplying those who patronize you because they happen to, or because they think you are a fine fellow?

Profit is one of the most interesting and intriguing words in the English language, and to capitalize it you must sell not only yourself and your service, but some real, understandable reasons why the oil you handle gives the best service.

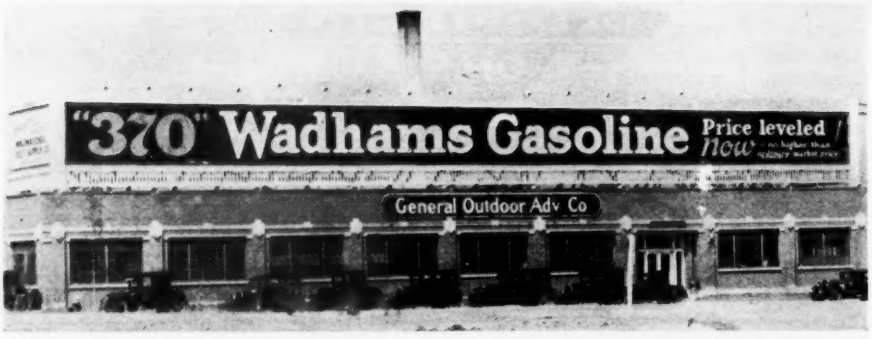
Jobbers handling Humble Oils know all of the reasons why people should buy their oils instead of other brands. They *believe* in these reasons themselves, many of them having been developed through experience. Consequently, their businesses are outstanding and profitable.

We can take care of your requirements in any quantity—in lithographed packages, drums, a carload or a cargo. We control every step in production and manufacture—from the wells to you.

Write, wire or phone for samples and prices.

Humble Oil & Refining Company
Houston, Texas
Producers - Pipe Lines
Refiners - Marketers
"Zero Cold Test Oils"

HUMBLE OIL & REFINING CO.
HUMBLE OILS
Reg US Pat Off
HOUSTON, TEXAS



Just a few words are better than a great deal of copy for an out-of-door "ad" the authorities of Wadhams Oil Co. of Milwaukee, believe. Compare the letters in the "370" gasoline advertisement over the General Outdoor Advertising Co.'s plant in Milwaukee with the automobiles on the ground

and wished they had more of that kind.

It was August, 1927, that a La Salle Extension University man came along with a proposition. La Salle had 18 years of successful experience in carrying on business training to recommend them for the assignment.

The oil company agreed to underwrite the cost and the university agreed to develop a course of training that was what the oil company wanted. But there was one more big hurdle to get over.

If the station men were made to take the course it would not do them any good, the management decided. To make them take it was not enough; they had to be made to want it. Thus two jobs fell upon the executives at once; getting the right course and selling it to the men. So they put a price of $20 on it (less than it actually cost the company) and took it out to the men.

The promoters traveled in pairs, a Wadhams man and a La Salle man. They arranged meeting after meeting of service station men so that every man at every station might hear the proposition first hand. It took more than a month of hard work but it went over.

In the meantime the course was being worked up and prepared for publication. Early last winter the work got under way and the scholastic routine began.

First each received an honor pledge, like the one reproduced herewith. He entered into an agreement with his employer's representative to take the course and study it and pay for it. The employer agreed to refund the tuition with the diploma.

The honor pledge is signed in duplicate. The student keeps one and the other is held in Wadhams Oil Co.'s main office. Three or four days later each student received his first book at his home address. And with the first book came the first working paper.

The books themselves are inviting. A 5 x 7 inch volume, bound in red, imitation leather, each having from 30 to 60 pages. They can be carried in a coat pocket. They can be read on the street car, at odd minutes about the station, or at home. The

Farmers' silos make fine billboards. With a little clever camouflage a silo can be made to look like a quart of oil, spout, cap and all. Wadhams Oil Co. of Milwaukee has developed several into attractive wayside signs. The body of the silo is a golden yellow to look like Wadhams Tempered Motor oil, a Gulf Coastal product. The screw top and metal spout are black. The cap and the trade mark on the "leble" are red. In some cases a board fence is built around the base of the silo and painted white to resemble the metal container which often appears on the pump island of a service station with a dozen quart bottles of oil

working papers are done mostly at home because they need to be written with clean hands on a steady table if the best grade is expected. The routine is much like any correspondence course.

When a man gets a text book and a working paper he must return the paper direct to La Salle Extension University in two weeks. There the papers are read by skilled instructors. Corrections and comments are made in red ink. When returned it is accompanied by a correct sheet, showing how the subject in the paper should have been handled. But it does not go back to the student direct. It returns through Wadhams Oil Co.'s main office where a specially designated man sees every one.

The man who sees every paper is F. H. Casey who, by reason of his scholastic assignment has come to be called "Prof. Casey." If papers are good he writes encouraging comments on the margin. If they are exceptionally good he even writes the student a special letter.

If the paper is poor he notes his disappointment on the margin. If it is very bad he resorts to "building a little fire" under the delinquent student. And at the end of each month Mr. Casey gets a list from Chicago, corresponding to a parent's report card on all the students.

Wadhams men are proud of the fact that 92 per cent of their students are turning in their papers on time and showing improvement in interest. The history of correspondence schools generally shows that not 50 per cent of the persons who buy courses ever try to complete them.

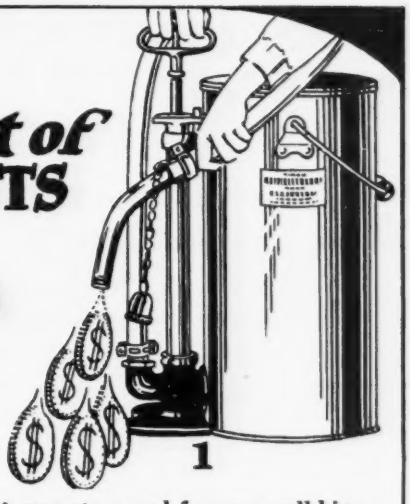
Emsco Derrick Merges

LOS ANGELES, April 13.—Announcement was made in Los Angeles this week that the Emsco Derrick & Equipment Co. of Texas was being merged with the company of the same name of California. The Texas company is capitalized at $600,000, the stock having a par value of $2500. The Emsco Co. of California is capitalized at $5,000,000, consisting of 50,000 shares of 100 par value. Stock of the Texas company will be exchanged for stock of the California company at the rate of four for one. Ed M. Smith is president of the company. W. A. Trout is vice-president and general manager with Charles D. Wagner as vice-president in charge of all sales, while Eddie Goeser is vice-president in charge of all engineering work.

H. H. Eagle Is Abroad

NEW YORK, April 13.—H. H. Eagle, vice-president and sales manager of the Cities Service Export Oil Co., is spending two months in Europe visiting the company's representatives. Mr. Eagle expects to return to New York around June 1.

YOU
Can Squeeze a lot of EXTRA PROFITS out of ATTWOOD
PORTABLE Oil and Grease CABINETS!



GO after individual car owners, fleet operators and farmers—all big-order users of oil and grease—with ATTWOOD *Portable* OIL and GREASE CABINETS. Build volume profits out of drum and barrel unit sales. Quick, clean and efficient for your own use too. Generous discounts on quantities. Write today.

No. 1—VALVELESS GREASE CABINET—Handles all lubes, light or heavy, no valves—nothing to get out of order. Capacity 20 lbs. Delivers exactly ¼ lb. to a stroke . . . . . List Price **$12.50**

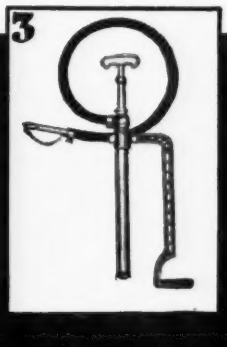
No. 2—GREASE CABINET—For medium oil and lubes. Strong, well-designed and a popular price . . List Price **$10.00**

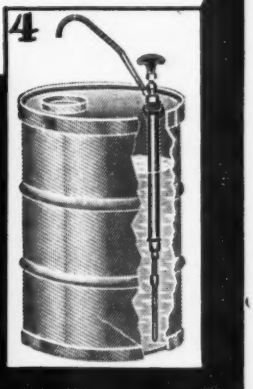
No. 3—SPEED PUMP—Transfers heavy lubes from original containers into gear cases, etc. Specially designed for tractor gear cases and other portable uses. A speedy operator. Pumps ¼ lb. on both up and down stroke. Built of seamless steel tube with heavy adjustable step base. List price (complete with 40" hi-pressure grease hose) **$5.00**

No. 4—BARREL PUMP—Telescopic base permits adjustment to any size barrel up to 34". Handles any liquid. Delivers approximately 1 pint to each stroke. Prevents oil waste and muss. Compact floor space saver . . . . . List Price **$5.00**

Write for complete bulletins, discounts and data.

ATTWOOD BRASS WORKS, INC.
768-78 FRONT ST. GRAND RAPIDS, MICH., U. S. A.





Oil And Grease Formulas

200 formulas, have been prepared in a simple, non-technical style by Forrest A. Hoff.

They are of value to the refiner, jobber, compounder, broker and lubricating engineer.

Just attach your check to this ad and return it to us now. $15 is the reasonable cost of all this information. Synopsis sent upon request.

National Petroleum News
1213 West 3rd St. **Cleveland, Ohio**

Visiting Around the Refineries

By Paul Truesdell

National Petroleum News

Refining Company Reports Increased Gallonage

CITIES SERVICE CO. is operating all its eight refineries at capacity, according to the company's annual statement, and averaging better than 33,000 barrels a day of crude oil. It is stated that the public's reception of Koolmotor gasoline, recently put on the market as a high test, anti-knock motor fuel, has been good. It is stated that plans are under way for the gradual increase in the capacity of the company's refinery at Titusville, Pa., in response to the demand for Pennsylvania lubricating oils. This plant now has capacity of 2000 barrels of crude a day.

A. P. I. Refinery Engineering Program

IT APPEARS certain that the next annual meeting of the American Petroleum Institute will have an excellent program devoted to refinery technology and engineering.

The A. P. I. committee on refinery technology, of which E. W. Isom of the Sinclair Refining Co. is chairman, met in Cleveland on the evening of March 27 to decide what sort of an organization should be formed to handle the refinery engineering program to be presented at the next A. P. I. meeting.

The chairman states that it was decided that the work could best be carried out by a committee composed of members from various refining districts so that the whole country would be represented. Chairman Isom was empowered to appoint such a committee. Definite appointments will be announced later.

Thus it seems unlikely that a refinery engineering program will be included next year in the annual meeting of the A. I. M. E.

Refining On a Big Scale

THE Standard Oil Co. of California ran an average of 159,279 barrels of crude a day through its three refineries, according to the statement of operations made by President K. R. Kingsbury. It is also stated in the report that seven cracking units were completed during 1927 which enlarged the company's gasoline producing capacity by about 5000 barrels a day.

How Easy to Start a Refinery Fire

THE short expressive story is taken from the Loreco Diamond, house organ of the Louisiana Oil Refining Co. and describes a fire that occurred at that company's plant:

"A fire that was started when a light globe broke in the hands of men cleaning a tank at the Gas Center Refinery on Saturday afternoon, March 3rd, resulted in a loss estimated to have been between $75,000.00 and $100,000.00, all being covered by insurance.

"When the fire broke out it quickly spread to a crude storage tank, in which there was about 19,000 barrels of crude oil. This tank burst from intense heat, and scattered the burning oil over a wide area, and the fire was only extinguished after great effort.

"No loss of life occurred, and only minor injuries were sustained by a few of the employees in fighting the fire.

"Operations were delayed two weeks and the only evidence remaining is the oil soaked ground, and a small pile of burned equipment."

Carbon Bisulfide for Cleaning Glassware

RALPH E. GOODE, American Refining Co., Wichita Falls, Tex., sends us this one:

"Carbon bisulfide or disulfide which is a valuable reagent for dissolving substances such as sulfur, iodin, phosphorus, rubber, resins and fats has been found also to be very useful when used along with hot water for cleaning and removing carbon and petroleum residues from laboratory glassware, such as centrifuge graduates and narrow neck bottles.

"When used alone it acts rather slowly for practical purposes and requires larger amounts for performing the work than when used with hot water.

"By first taking a few cubic centimeters of carbon bisulfide and shaking in the vessel containing the viscous material and then pouring out (the carbon bisulfide may be reclaimed by distillation) and then rinsing the flask with hot water a thorough cleansing in a very short time will result. Just a small amount of hot water should be added at first and larger amounts afterwards."

Liquid Phase Cracking Plants Going In

IT IS evident that the strong interest that has recently grown up around the vapor phase cracking art has not killed interest or confidence in the older liquid phase methods. Within a year a number of liquid phase cracking plants have been built and some are under construction now.

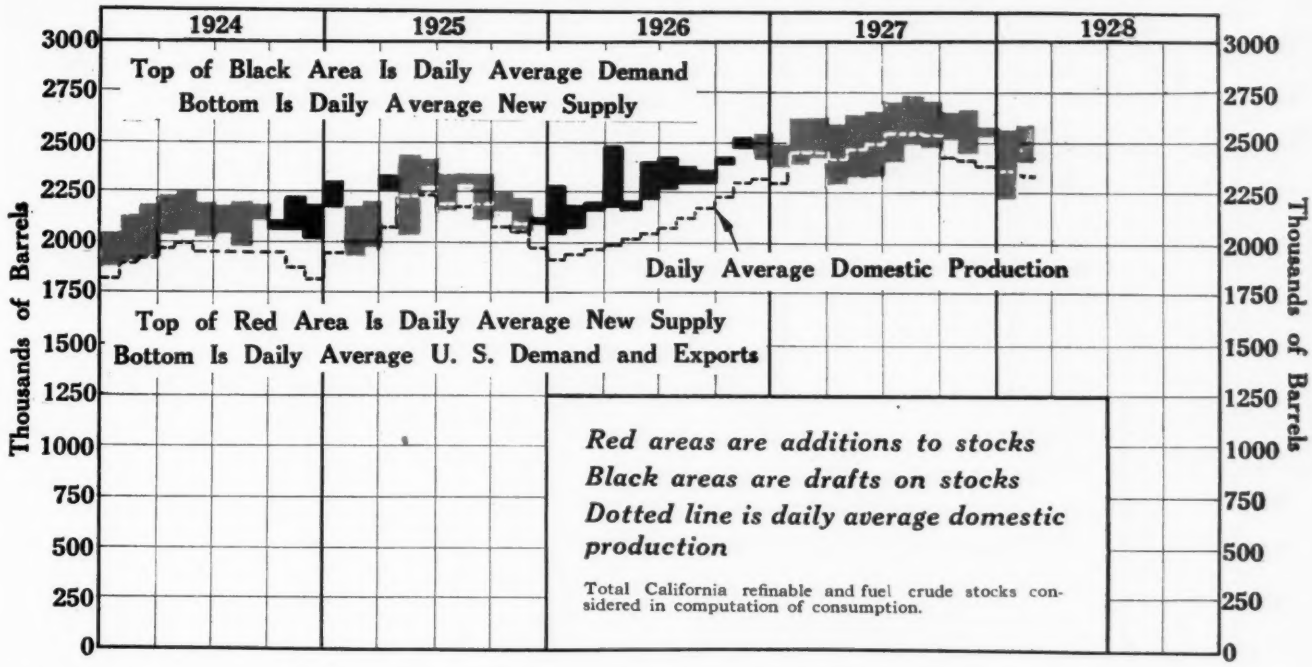
Utah Oil Refining Co. at Salt Lake City late last fall installed two Holmes-Manley units and the Standard Oil Co. of Kansas installed one at Neodesha. The Texas Co. is now building one 2000-barrel a day unit at its plant in Pryse, Ky., and has licensed a 1000-barrel unit to the Raffineria di Olii Minerali Societa Anonima for its plant in Fiume, Italy.

Within the last six months six Dubbs units have been built and eight are now under construction, according to the Universal Oil Products Co. The Empire Refineries, Inc., installed two 1500-barrel units at Ponca City, Okla., and two of the same size at Gainesville, Tex. The Pennzoil Co., Oil City, Pa., put in two of 1250-barrel capacity each. Eight units with a total capacity of 24,000 barrels are said to be under way at the El Segundo plant of the Standard of California.

Three Jenkins cracking units are said to be under construction at present.

Crude Oil Production and Demand

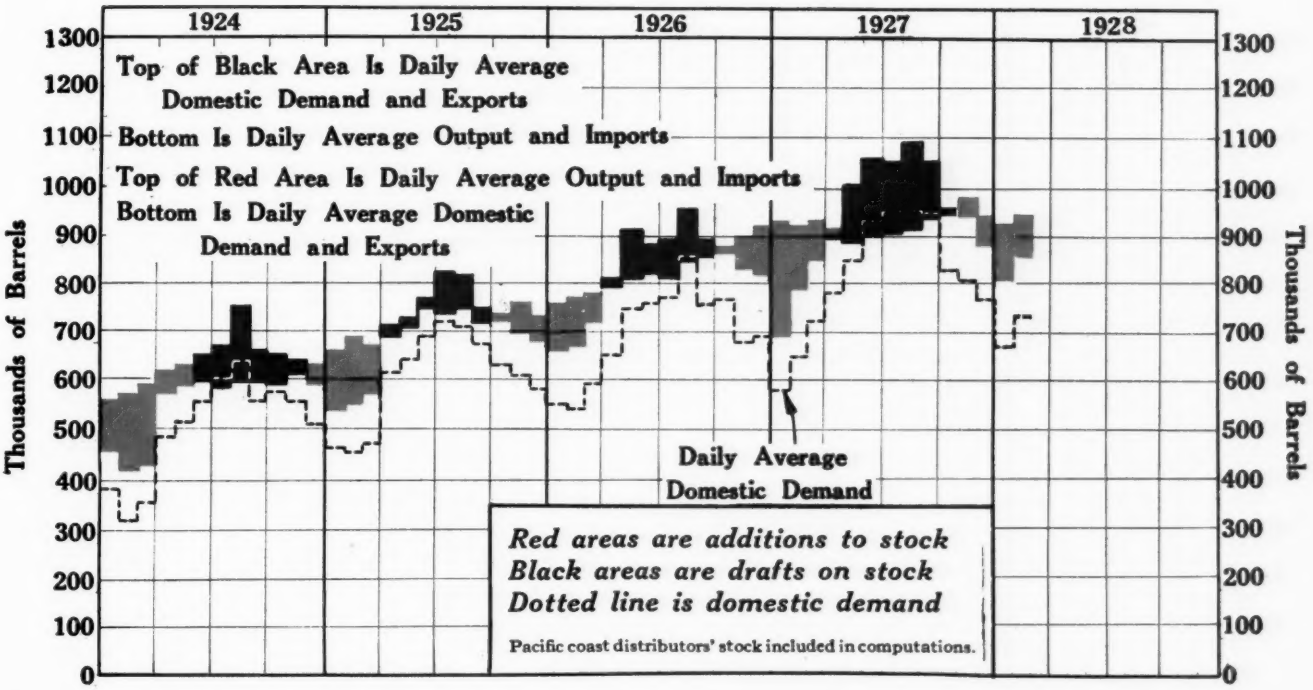
For detailed story, see page 69, April 11 N. P. N.



February domestic production	2,332,000 Bbls. daily av.	Stocks in pipe lines, and at tank farms east of California, Feb. 29, 1928	320,545,000 Bbls.
February imports	208,100 Bbls. daily av.	Stocks at refineries east of California	42,361,000 Bbls.
Total new supply	2,540,100 Bbls. daily av.	Stocks of foreign crude not at refineries	57,000 Bbls.
February indicated demand east of California	1,735,700 Bbls. daily av.	California stocks 20° A. P. I. and lighter	20,110,000 Bbls.
February indicated California deliveries	619,000 Bbls. daily av.	California stocks heavier than 20°	94,797,000 Bbls.
February exports	42,900 Bbls. daily av.	Total stocks Feb. 29, 1928	477,870,000 Bbls.
Total indicated demand in February	2,397,600 Bbls. daily av.	Increase in stocks in February	4,158,000 Bbls.
		Stocks Feb. 28, 1927	402,868,000 Bbls.

Gasoline Production and Consumption

For detailed story, see page 69, April 11 N. P. N.



February domestic output	923,000 Bbls. daily av.	February exports	115,000 Bbls. daily av.
February imports	13,000 Bbls. daily av.	Total indicated demand	844,000 Bbls. daily av.
Total new supply	936,000 Bbls. daily av.	Stocks Feb. 29, 1928	38,782,000 Bbls.
February domestic shipments	729,000 Bbls. daily av.	Increase in stocks in February	2,670,000 Bbls.
		Stocks Feb. 28, 1927	49,714,000 Bbls.

MAKING "AIR" PAY PROFITS

We used to say "Free Air" brings customers in, and the gas and oil they buy pays for the air equipment. Now, with the many other uses for air, such as motor cleaning, lifting of grease racks, high-pressure grease systems and gasoline dispensing systems—all of which classes of service bring direct cash returns, we say

"A DAYTON G-8 PAYS FOR ITSELF QUICKLY"

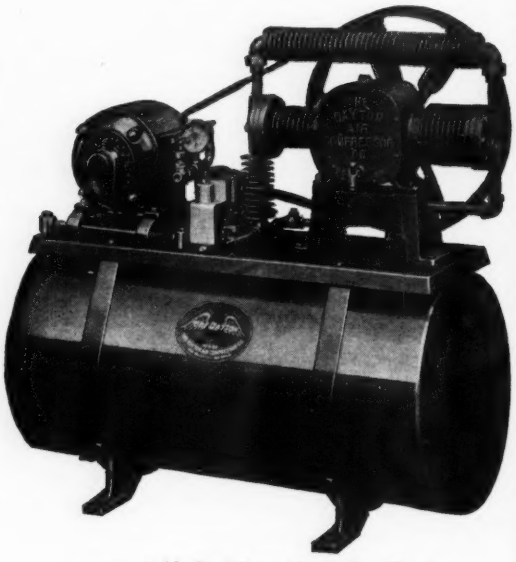
The compressor was formerly an advertisement for your plant. It still inflates tires, but at the same time it performs many money-making tasks.

THIS IS THE DAYTON G-8

Made in 7 sizes, from 2¼ to 9¼ cubic feet per minute capacity.

A size to fit your every need for compressed air.

Tell us what you expect of air; we will tell you the size and type you should buy.



G-8 2 H. P. Motor 60 Gallon Tank Capacity 9¼ cub. ft. per min.

Why Daytons Last

Dayton Air Compressors, of the Two-Stage Models, have no connecting rod, crosshead pin, cotter pin or bolt. Nothing to cause trouble or get out of order. Hence, greater efficiency.

Our Engineers Tell You

If you are in doubt as to type of compressor best suited to your needs, just write stating your case to Engineering Department, Dayton Air Compressor Co., Dayton, Ohio. Prompt reply.

The LUCAS PUMP & TOOL COMPANY DAYTON, OHIO.

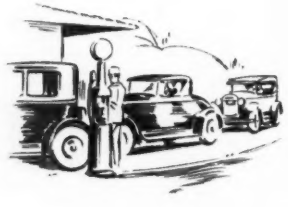
DAYTON AIR COMPRESSORS

425 Valley St. **Dayton, Ohio**

Increase Club, Lodge and Factory Business

ALLISON COUPON BOOKS

Accurate—Compact—Convenient



Clubs and similar organizations like the convenience of making their purchases on a coupon basis. Get their business for YOUR filling stations with Allison Coupon Books. Furnished in stock or special designs. Absolutely accurate. Send for samples and prices.

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Coupon Book Specialists Since 1888

New Stations Building

New Lexington, O.—Thompson Oil Co., Coshocton, O., bulk station.

Mason City, Ia.—James Kuchar, filling station.

Warren, O.—The Texas Co., filling station.

Stanton, Neb.—Kile Martin, filling station.

Savannah, Ga.—American Oil Co., filling station.

Wilmington, N. C.—Red "C" Oil Co., filling station.

Plant City, Fla.—Dave Whilden, filling station.

Brewton, Ala.—Sinclair Refining Co., filling station.

Fairmont, Minn.—Martin Nelson, filling station.

Ellsworth, Minn.—H. G. Poppkes, filling station.

Great Falls, Mont.—Arctic Gasoline Co., filling station.

Langdon, N. D.—L. C. Nicholl, filling station.

Madison, S. D.—White Eagle Oil & Refining Co., filling station.

Superior, Wis.—M. O. Anderson, filling station.

Postville, Ia.—Casten Bros., filling station.

Reinbeck, Ia.—H. B. Leckbee, filling station.

Waterloo, Ia.—H. U. Boslough, filling station.

Bridgeport, Neb.—Gus Weisbach, filling station.

Red Cloud, Neb.—O. D. Hedge, filling station.

Brainerd, Minn.—Syreen Bros. Oil Co., filling station.

Livingston, Wis.—Standard Oil Co. of Indiana, filling station.

Lamonte, Ia.—Standard Oil Co. of Indiana, filling station.

Dike, Ia.—Harry Leckbee, filling station.

Malta, Mont.—The Texas Co., filling station.

Wahoo, Neb.—The Texas Co., filling station.

Hillsboro, O.—Joe Chatt, filling station.

Hobson, Mont.—Woods Oil Co., headquarters here, filling stations at Utica and Moccasin, Mont.

Wausau, Wis.—C. W. Magee, filling station.

Neillsville, Wis.—Carl Lewerenz, filling station.

Manchester, Ia.—W. A. Jarvis, filling station.

Cedar Rapids, Ia.—P. J. Laffan, filling station.

McArthur, O.—Charles Fry, filling station.

Sycamore, O.—A. C. Walton, filling station.

Elyria, O.—C. A. Gott, filling station.

Lancaster, O.—Bletzacker-Ewing Tire Co., filling station.

Coral Gables, Fla.—John H. McCarthy, filling station.

Medina, O.—Earl Averill, filling station.

Choteau, Mont.—Adams Oil Co., filling station.

Evansville, Minn.—Home Oil Co., filling station.

Watertown, S. D.—Paul Born, filling station.

Leeds, N. D.—York Oil Co., filling station.

Minneapolis, Minn.—N. S. Haagner, filling station.

Nicollet, Minn.—Fred Stolz, filling station.

Newark, O.—Pure Oil Co., filling station.

Tigerton, Wis.—Robert Oestereich, filling station.

Fairmount, N. D.—Ed Reubish and Rollie Allen, filling station.

Elgin, N. D.—Elgin Oil Co., filling station.

Baudette, Minn.—Elmer Lindholm, filling station.

Cherokee, Ia.—Standard Oil Co. of Indiana, filling station.

Tecumseh, Neb.—Thomas and Louis Green, filling station.

Gering, Neb.—Harry Huff, filling station.

London, O.—Dr. Kilby Farrar, filling station, which will be leased to Louisiana Oil Refining Corp.

Waverly, O.—John C. Foster, bulk station.

Seymour, Tex.—Warren Bros., filling station, which will be leased to The Texas Co.

Norfolk, Neb.—Nicholas Oil Corp., filling stations.

Cedar Rapids, Ia.—Mid-Continent Petroleum Corp., filling station.

Oskaloosa, Ia.—Mid-Continent Petroleum Corp., filling station.

Davenport, Ia.—Skelly Oil Co., filling station.

Peoria, Ill.—Fred Graff, filling station.

Des Moines, Ia.—Roxana Petroleum Corp., filling station.

Little Falls, Minn.—W. N. Hansen, filling station.

New Ulm, Minn.—Klossner Oil Co., filling station.

West Liberty, Ia.—John Mills, filling station.

Lebanon, Tenn.—Hill Deakins, filling station.

704 Heil Truck Tanks . . . *deliver and advertise* . . . Texaco Gasoline

One of the 704. Illustration shows Heil 4 compartment elliptical tank, 800 gallon capacity, with integral can box, Heil full flow air vents, emergency valves with individual controls, drop panel can racks, and Heil patented lift lock bumper bar on Mack chassis.

SIX years ago, the Texas Co. purchased its first Heil Truck Tank. Heil Quality appealed to the Texas Co. as being in accord with its own high standards. From one tanker, the Heil-Texaco fleet has grown until 704 Heil Truck Tanks are now doing "double duty" service for the Texas Co. We say "double duty" because Heil Tankers are designed to advertise as well as deliver the products they carry. They are moving billboards. Mail the coupon below, today, and let us prove to you—there's extra value in Heil Quality Truck Tanks.

1238-50 26th Avenue
MILWAUKEE, WISCONSIN

THE HEIL CO.

Manufacturers of
TANKS, BODIES, HOISTS

CLIP THIS COUPON! ***MAIL TODAY!***

The HEIL Co., 1238-50 26th Avenue, Milwaukee, Wis.

We are interested in the tank that will not only deliver our products but advertise them as well.

Size..... **; Number of compartments**..... **; Please send complete information.**

Print Name.....

Firm Name.....

Address.....

Special Equipment Desired.....

Our Industry — A Page of Facts and Personalities

National Petroleum News

By Paul Wagner

L. E. Barrows, division manager at Fort Worth of The Texas Co., writes NATIONAL PETROLEUM NEWS to make the point, which he says is heretofore unpublished in any oil periodical, that—

"The presence of water, whether entrained or at the bottom of the tank, is not a requisite for a tank boilover to occur in case of fire."

Both Mr. Barrows and H. H. Hall of the Standard Oil Co. of California (NATIONAL PETROLEUM NEWS, June 10-24, 1925 issues) found in their studies of tank fires that the so-called "heat wave" extending below the burning surface was the most frequent cause of boilovers.

The Texas Co.'s engineering investigation, described as completely covered in a final report dated Dec. 2, 1912, proved to the satisfaction of Mr. Barrows and the engineering committee he headed that the "heat wave" does not necessarily extend to the bottom of a tank to cause a boilover.

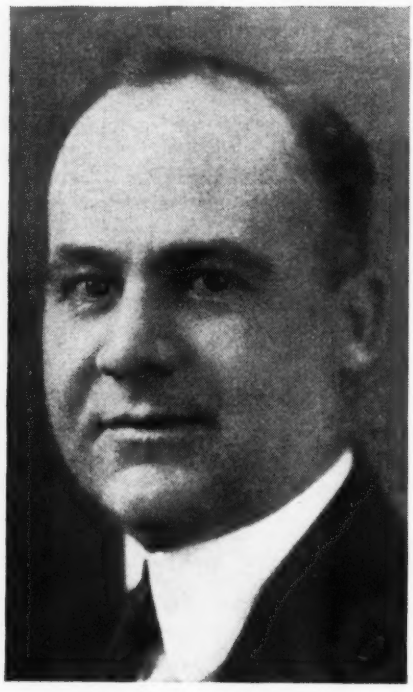
In the investigations of Mr. Barrows' committee, he says that "In order to satisfy themselves as to entrained water in the oil causing a boilover we made up a crude oil with characteristics similar to Oklahoma crude by using residuum, gas oils, kerosene, gasoline, etc., all of which had been through a regular distillation process in the refinery and contained no trace of moisture or b.s., as determined by centrifuge and distillation tests. This manufactured crude oil boiled over in exactly the same way as did the natural Oklahoma crude, proving conclusively that water had nothing to do with it."

* * *

T. J. Donoghue, executive vice president of The Texas Co., is the new head of the Houston Club, a city-wide organization of business leaders. He succeeds William Strauss, who had served the Houston Club as president for 10 years. Mr. Donoghue is widely known in petroleum affairs not only of the southwest but the entire nation.

* * *

C. H. Lieb, Tampico manager of the Transcontinental Petroleum Co., subsidiary of Standard Oil Co. of New Jersey, has been re-elected president of the Gorgas (American) hospital board. James W. Bradbury of the executive staff of Mexican Gulf Oil Co. is the board's secretary.



J. E. ELLIOTT
First vice-president of the American Association of Petroleum Geologists

John Elbert Elliott, petroleum engineer and newly elected first vice president of the American Association of Petroleum Geologists, is more widely known as "Brick" Elliott. He is president of the Elliott Core Drilling Co., of Los Angeles, and other companies which bear his name. These include the Elliott Petroleum Corp., the Elliott Extension Oil Co., and the Elliott Consolidated Oil Co.

Mr. Elliott, who was born in Bozeman, Mont., May 31, 1887, received his higher education at Stanford, where he was graduated with an A. B. degree in mining and geology in 1911. His first work was with the Associated Oil Co., where he was chief statistician in 1911-1912. In the latter part of 1912 he became assistant chief geologist of the Carribean Petroleum Co., in Venezuela, returning to the Pacific Coast in 1913 to become geologist for the Shell Co. of California. He was chief geologist for the last mentioned company from 1915-1920.

After serving as associate professor in petroleum technology at Stanford in 1921, Mr. Elliott participated in forming the consulting engineering firm of Elliott & Merritt. The Elliott Core Drilling Co. was formed soon thereafter and his other operating interests were later developed.

Keith Crouse of Tulsa has succeeded Ernest Sidwell as field manager of the Prairie Oil & Gas Co., at Artesia, New Mexico. Mr. Sidwell was transferred to Long Beach, California.

* * *

Scouting forces of The Texas Co. in the southwest are being reassigned to wider areas. R. E. Witty is being transferred to Abilene and C. P. Powers to Fort Worth from Midland, Texas. C. J. Bradley may remain at Colorado City, Mitchell county. John A. Nichols returns to San Angelo from Midland.

* * *

M. A. Stanton, head of the Cypress Tank Co., Shreveport, and familiarly known to his legion of friends as "Mike," has returned home after a stay of several weeks at Mineral Wells. Mr. Stanton is recovering from the effects of an automobile accident that resulted in the breaking of a number of bones several months ago.

* * *

T. R. Waterberry, formerly manager of the Continental Oil Co., in Antwerp, has been appointed manager of The Texas Co., Ltd., at London.

* * *

Phil Bohart, chief geologist of the Mexican Gulf Oil Co., has returned to Tampico after a trip to the United States, which included attendance at the San Francisco meeting of the American Association of Petroleum Geologists.

* * *

T. J. Gilsenan, for 12 years in the terminal division office of The Texas Co., at New York, is now with the General Motors Export Corp. He was assistant to the general superintendent of the terminal division when he resigned.

* * *

Benjamin H. Rupard, chief clerk in the Luling, Texas, machine shop of Magnolia Petroleum Co., resigned, effective April 1. David W. Wright, assistant in the Westbrook, Texas, field office of Magnolia, under Supt. C. V. C. Bradley, also has resigned.

* * *

Charles Doughty of the Bossier City refinery organization is president of the "Loreco" Club, an inter-office group of Louisiana Oil Refining Corp. employees at Shreveport.

* * *

W. A. Sayre of the production department of Huasteca Petroleum Co., arm of the Pan American group in Mexico, is spending a two months vacation in England.

* * *

George Gammill is now attached to the Gulf Coastal land division offices of The Texas Co. He formerly was with the Amerada Petroleum Corp., working out of its Shreveport offices.

* * *

Rayford Mullins is back in the oil purchasing department of the Magnolia Petroleum Co., Dallas, after a year's leave of absence.

Daylight view of the California Petroleum Corp.'s super service station at Wilshire boulevard and Vermont avenue, Los Angeles

Super Station Designed as Mosque

Staff Special

LOS ANGELES, April 13

CALIFORNIA, long celebrated for its climate, fruits, millionaires and movie stars, has added artistic filling stations to this list, with the architect skillfully laying out new plans designed to appeal to the artistic senses of motorists.

A good example of this step toward prettier marketing stations, is illustrated in the distinctive super service station built by the California Petroleum Corp. in Wilshire boulevard, at Vermont avenue, Los Angeles, which was opened early last year.

Since it is estimated that more than 55 per cent of the motorists in this region are women, John Marshall, station superintendent, does his utmost to have his smiling force cater to women and also study them from the standpoint of the salesman. Women are constantly drawn into the station by its attractiveness and practically everyone comments on its unusual beauty and service.

The designer of this quaint station brought the style, known as the Tunisian, from northern Africa.

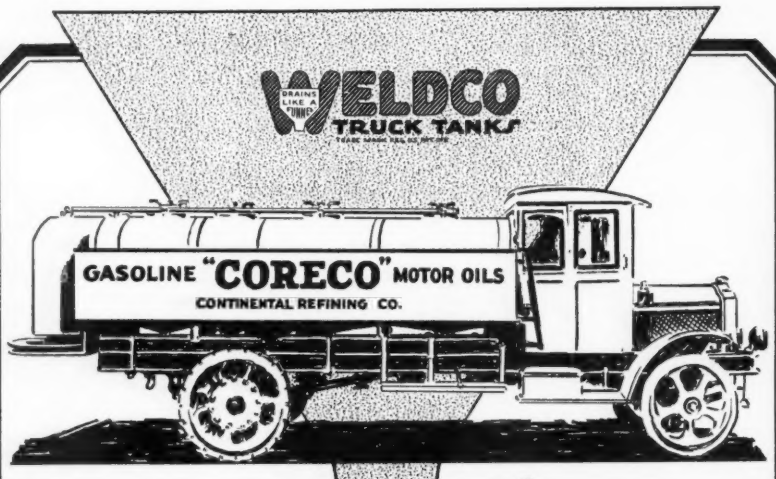
The center of the station resembles a mosque. It has four high grilled iron gates; one front and back and one leading into each canopy. These are kept half folded during business hours. The color scheme is red, white, tan and black. Mosaic tile is used throughout the station whose walls are white stucco. The station includes an accessory shop, a pressure lubricating department, washing and polishing unit, and tire and battery service department which are in a building along the rear of the lot and are leased to Scofield. There also is a small sandwich shop in the rear building.

Three wide driveways, one on the side and two in front, afford a quick entrance from the heavy traffic of Wilshire boulevard and Vermont avenue, the second most heavily traversed intersection in Los Angeles. A traffic survey early in February showed 15,135 machines passed this station between 2 and 6 p.m.

Canopies form wings for the station. Under each canopy are three combination visible gasoline and oil pumps—a new type. Each pump has a 10-gallon visible bowl, and each grade of oil is displayed in labeled glass tubes in a frame around the middle section of the standard. At each corner under the canopy is a water hose and a small fire extinguisher. At the side of the yard are four combination water, air, and light towers.

The 15,000 square feet of service area is paved with red concrete. The main floor of the station is washed every morning with hot water and soap, and the rest is flushed

Night view of California Petroleum Corp.'s super service station at Wilshire boulevard and Vermont avenue, Los Angeles. This super service station was designed to attract motorists who lean toward the artistic which class includes women drivers who are said to aggregate more than half of the Los Angeles gasoline and motor oil buyers



Empties Clean *at any angle!*

CAREFUL buyers are specifying the WELDCO Truck Tank because it combines all of the features that are desired, plus the famous Funnel Drain. This exclusive feature relieves the annoyance of juggling wheels of Truck Tank to complete drainage. It empties clean—drains to the last drop—*at any angle.* Each is custom-built to meet your particular needs and to meet them best. Illustrated literature and prices gladly sent.

The Youngstown Welding Co.
Welders Since 1912
Youngstown, Ohio

WHEN YOU WANT QUALITY AND REASONABLE PRICES
Mixed Carload in Drums—or Tank Cars
"INVINCIBLE" MOTOR OILS
"CASTOR-OI" (BEAN CASTOR BLEND) MOTOR OIL
100% Pennsylvania or Western Blends
To Match Any Oil Made
A. D. MILLER SONS' CO.
Millers Oil Refining Works
PITTSBURGH, PENNA.
Oldest Pennsylvania Refiners

with a hose once or twice a day.

The interior of the station is attractive. Cabinets for supplies have been built into three corners. The doors of these cabinets have mosaic patterns painted on them. In the fourth corner is a black and white tile drinking fountain. A wrought iron marble topped table, in harmony with the gates, stands in the center of the room, with a brass shield on each side on which is Calpet's monogram. A white cash register is placed on the table, over which is a chandelier of wrought iron and glass.

A lounge in the rear building is inviting to women patrons. There is a red leather topped wicker settee with lovely pillows, a number of rockers, a taupe rug, and smoking stands. At one end is a wicker stand with a Venetian mirror above it. A white tile toilet room is kept spotless. Cleanliness in this part as well as in the whole station always attracts women.

Illumination is well taken care of, especially from the artistic standpoint. Two light posts are in front of the rest rooms, two in front of the accessory shop, and four along the side. Flood lights on the roof of each canopy shine on the dome and the copper finial at its peak. On all four sides of the dome are red Neon signs, each forming the word Calpet. Two flood lights in a strip of shrubbery illuminate the front of the building. On the white cement wall, which extends along one side of the lot, are four red jars which contain little palms and in which are four red lights. Just recently Wilshire boulevard had its night of splendor, when its new street lights of 2,500 candlepower each were turned on. These are the most brilliant lights in the city and two are in front of the mosque.

There is just enough shrubbery to be in keeping with the station, with sword palms predominating. Flower beds are on each side of the property, in front of the main building, and in the parking strip. Many quaint shrubs and cacti are planted around the palms, and a little hedge surrounds each bed. A pointed black cement curbing outlines each bed.

The station boasts a colored liveried footman. The manager feels this is not only an attraction but an aid to the many people who leave their cars to enjoy the beauty of the station. The force of eight men is a smiling as well as courteous one, giving the utmost service to everyone who enters the station. Being in one of the most wealthy sections of Los Angeles, most of the business is with the more moneyed people.

The service men wear maroon jackets, white shirts and breeches, black bow ties and puttees.

Tires and batteries are tested and refilled. The air gages are renewed

every week so the pressure in every tire will be correct. The super-service department keeps an accurate check on all oil changing and tires sold.

After a person has had work done, he or she is sent a personal letter thanking him or her for the business and extending an invitation to return. Many interesting folders and Calpet radio programs are distributed through the service station to motorists.

In a contest to increase the sales of Calpet products during September and October over sales of July and August (the best months) this station sold more products than in any other two months.

The station has a storage capacity of 6,000 gallons, having three 2,000-gallon underground tanks in the front of the property.

Republic Supply Co. Buys Associated Supply Co.

LOS ANGELES, April 12.—J. A. Crawford, vice-president of the Republic Supply Co. of California, announced last week that his company had purchased the Associated Supply Co. from the Youngstown Sheet & Tube Co.

The Associated Supply Co. until recently was owned by the Associated Oil Co., but soon after the purchase of the Associated Oil Co. by the Tidewater, was sold to Youngstown.

It was rumored that the purchase price was $2,000,000. Officers of the Republic Supply of California include, P. M. Pike, president; J. A. Crawford, first vice-president; J. M. Cummins, second vice-president, and H. H. Glen, secretary.

Foreign Opportunities

Reserved information may be obtained from the Bureau of Foreign and Domestic Commerce, Washington, and its district and cooperative offices by duly registered firms and individuals upon written request by opportunity number. The Bureau does not furnish credit ratings or assume responsibility as to the standing of foreign inquirers; the usual precautions should be taken in all cases, and where no references are offered it does not necessarily imply that satisfactory references could not be given. Correspondence may be in English unless otherwise stated.

30422.—**Lubricating oils and greases,** Havana, Cuba, agency.

30431.—**Paraffin wax, Nuremberg,** Germany, agency.

30432.—**Paraffin wax,** Leipsig, Germany, agency.

30433.—**Yellow and heavy petrolatum,** Frankfort, Germany, purchase.

30435.—**Lubricating oils and greases,** Caracas, Venezuela, agency.

30436.—**Lubricating oils and greases,** Deventer, Netherlands, agency.

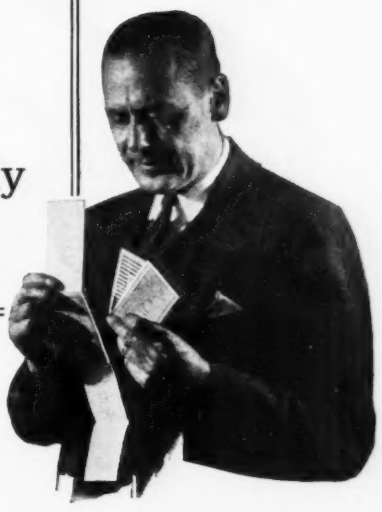
30437.—**Lubricating oils and greases,** Hamburg, Germany, agency.

30549.—**Lubricating oils,** Budapest, Hungary, agency.

30550.—**Gasoline, kerosene, and lubricating oils,** Bordeaux, France, agency.

30554.—**Lubricating oils,** Santa Cruz, Canary Islands, purchase.

Sinclair, Texaco, Associated Oil *all* use Rand McNally Coupon Books



THERE are many reasons why large companies like these and smaller companies as well use Rand McNally Coupon Books.

Better Service
Economy

Years of experience have taught them the saving and convenience in relying on Rand McNally printing.

They have found it more economical and dependable. They get better service, quicker deliveries.

Perfect printing, *guaranteed* numbering, certified count, special packaging, are but a few of the many advantages.

For Rand McNally & Company are *specialists* in coupon book and ticket printing of every kind.

They have skilled workers and a large modern plant equipped with the latest labor-saving machinery. Thus the cost of producing high-class work is held to the minimum.

100%
Protection

Your coupons and tickets represent cash. Printed the Rand McNally way, both your company and your customers are assured 100% protection.

Before placing your order, write or wire for samples and prices. A variety of special and stock designs are on hand for selection by any oil company desiring to install the coupon book system.

RAND McNALLY & COMPANY
Dept. S-10

270 *Madison Avenue* New York
536 *S. Clark Street* Chicago
559 *Mission Street* San Francisco

OIL IN THE TANK
Is As Good As Money In The Bank

Save Your Oil, Until Sold in
BROWN OIL TIGHT TANKS
Our Double Electric Welding Process
Insures You Against Leaks.

Get Our Figures. Compare The Specifications

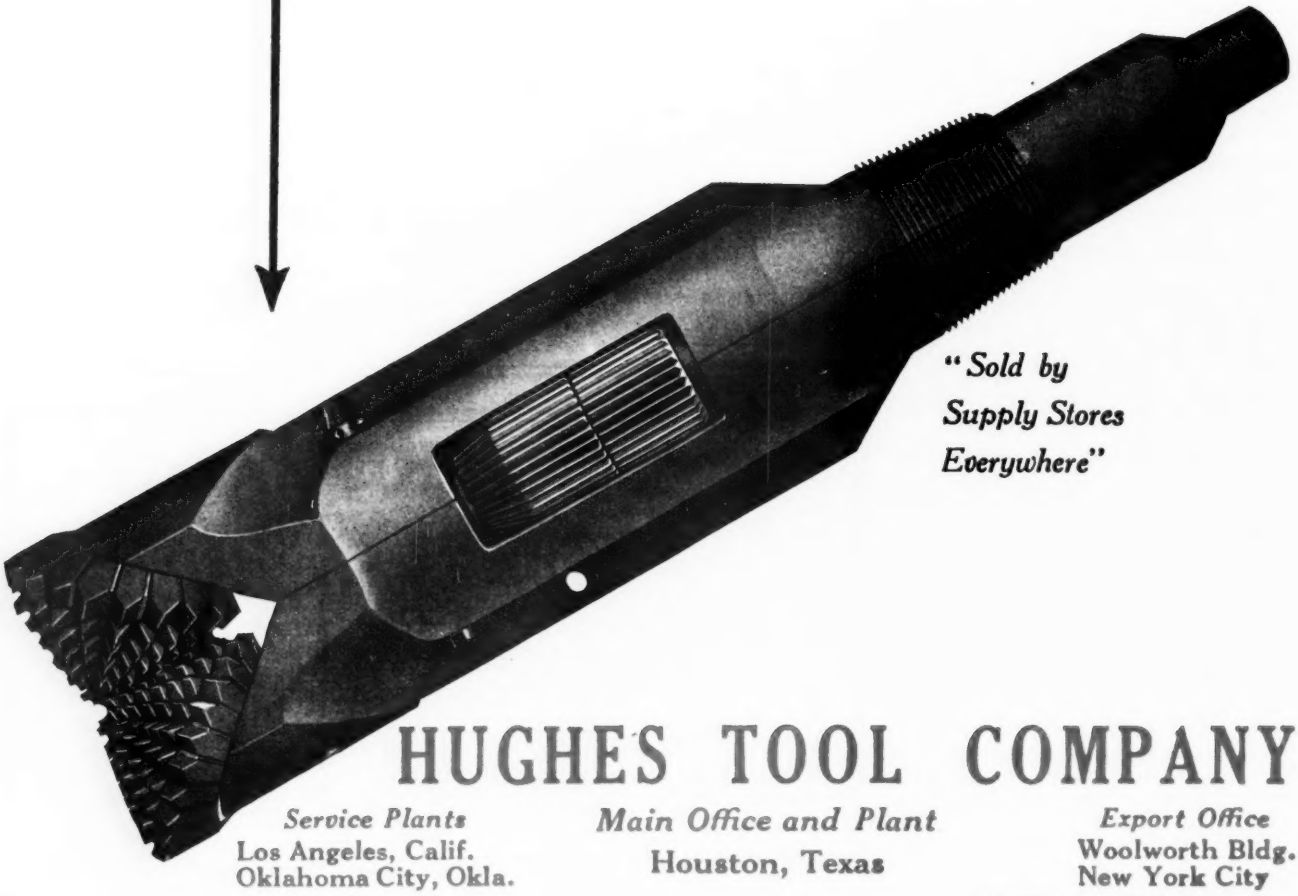
BROWN SHEET IRON & STEEL CO.
SAINT PAUL, 964-1000 Berry Avenue MINNESOTA

Serving the Industry with SPEED

HUGHES SELF-CLEANING CONES

Speed in getting the hole down is essential to Drilling Economy.

Since the inception of Hughes "Self-Cleaning" Cones, Operators and Contractors in the Rotary fields throughout the world have been able to cut their drilling costs per well a worthwhile extent.



"Sold by Supply Stores Everywhere"

HUGHES TOOL COMPANY

Service Plants
Los Angeles, Calif.
Oklahoma City, Okla.

Main Office and Plant
Houston, Texas

Export Office
Woolworth Bldg.
New York City

Eleven Wells Averaging 2 Bbls., Daily, Clear Owner $10,942 Yearly

By Paul Wagner
N. P. N. STAFF WRITER

HOUSTON, April 14

FROM 11 shallow wells that average between 2 and 3 barrels daily settled yield, a San Antonio producer last year cleared $10,942, or nearly $1,000 each. An expense of 1.20 cents per barrel direct lifting cost for taking the oil out of the ground and putting it in lease storage tanks was averaged.

The owner of the property, George Ginter, operating in the Southton pool, near the city limits of San Antonio, is working out some of the industry's problems in his own quiet way. His methods, plus a combination of circumstances, permit profit-showings that few larger producing organizations have ever been able to match, even in isolated instances.

Ginter, who formerly was plant superintendent for the B & W Boiler Works, settled in San Antonio shortly after the war. He was a mechanical engineer by profession—a member of the American Society of Mechanical Engineers—but an oil man by choice. Seeing an opportunity of making money in the oil business he set about applying to production activities the type of economical operating ideas he had used successfully in the industrial plants of the east.

Both standard and rotary methods of drilling had been used in the Southton area, where production is found at depths of 500-700 feet. Ginter went to work and developed a rotary-type outfit of his own. It was made of a light weight rotary table and draw-works, under a 66-foot derrick, using a 5-ton chain drive truck for power. In operation, the truck is backed up to the draw-works; the chain is taken off the wheels and put on the line shaft from one side of the truck; then the differential is locked and the other chain operates the slush pump, which is placed on the truck itself.

The total cost of fuel and lubricants for drilling does not exceed 50 cents an hour for operation. It is costing an average of about $1,000 to drill and equip wells, by this method, for pumping. Of course, this capital expense is in no part charged against the 1.20 cents per barrel direct recovery cost mentioned for taking the oil out of the ground.

As a result of tests Ginter found that none of his wells pumped-off at the same time. He decided, therefore, to pump them in pairs. To do this, a speed reduction set was built with a ratio of 180 to 1, using 1½-horsepower electric motor at 1800 revolutions per minute, and with an eccentric on the slow speed shaft operating a walking beam.

Pumping arrangement on Ginter property at Southton, Texas, showing walking-beam hook-up for pumping shallow wells in pairs. Well at left is direct connected to the walking-beam; other, not visible in picture, is operated by means of standard jack and cable connected to walking-beam over sheave actuated by eccentric on slow motion shaft of pumping unit

Two wells are balanced on the walking beam by means of a sheave and cable to a light weight standard jack on the second well. One well direct-connected to the walking beam; the other well is operated by means of the jack and cable; connected to the other end of the walking beam over the sheave, which is actuated by the eccentric on the slow motion shaft of the pumping unit.

The strokes are adjusted so as to have the wells pump-off at the same time, resulting in the low power cost mentioned. By the simple operation of throwing a switch the wells are put on production and set pumping twice daily—45 minutes each morning and 30 minutes each afternoon. Such work as may be required on wells or equipment, which is very little, is done between pumping periods.

Oil produced in the Southton area, averaging about 200 barrels daily for the 101 wells owned by the several operating interests, is free of water and other foreign matter. Although of paraffin base the oil causes a minimum of trouble in handling. Rods are pulled only about twice a year to replace cups and for general inspection. Pioneer Oil & Refining Co., which operates a plant at Somerset, has a pipe line to the field and buys the oil. The 34 A.P.I. gravity crude takes a price of $1.24 a barrel on the present market schedule.

The Southton pool, which is one of several similar sized developments in the shallow San Antonio district, is within seven miles of the historic Alamo, where Santa Anna's massacre preceded the victory on San Jacinto bay that resulted in the old Republic of Texas being freed from the yoke of Mexico. The field is between Salado creek and the San Antonio river, with a fine paved highway and the Southern Pacific railroad running through it. Because of high-line connections cheap electrical power is readily available.

Discovery of the Southton field dates back to 1918, when it was brought in by Senator Reynolds and associates of New York. Its limits are now considered to be virtually defined, although the potentially productive acreage has not been all drilled. Belief exists also that a deeper producing horizon eventually will be found productive in the San Antonio district at depths below 2000 feet. Very little testing has been carried forward in an effort to find such a deeper pay.

Tom Allen Killed in Auto Accident

CLEVELAND, April 16.—T. H. C. Allen, formerly general manager of the Vulcan Oil Refining Co., Coraoplis, Pa., was killed two weeks ago in an automobile accident in New York, friends in Cleveland have been informed.

Why does he look at the label?

NOT one man in a thousand possesses expert knowledge that qualifies him to pass critical judgment on a suit of clothes. He has neither time nor the inclination to be an expert on the infinite number of articles he buys.

In his mind that label is a warranty of value —a personal promise of complete satisfaction from the manufacturer. He takes it for granted that the manufacturer whose name appears on the label knows his business. So he buys on confidence.

And the confidence of the buying public has become so integral a part of the success of manufacturer that he dare not jeopardize it by slighting value.

The American Steel Package Company was founded on the ideal of manufacturing a product identified with a high degree of value and during years of manufacture we have constantly strived to add to the esteem in which Defiance Steel Barrels are held among buyers in the oil field.

THE AMERICAN STEEL PACKAGE CO.
Defiance, Ohio

DEFIANCE

Distinguished for Honest Value

Biggs
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Bulk Storage and Station Tanks
Forty years successful experience; plant fully equipped for fabricating plate up to 1½" thick.
Pressure Stills for Cracking Process - Fractionating Towers - Dephlegmating Towers, Bubble Towers - Heat Exchangers - Agitators - Steam Stills - Crude Stills - Condenser Boxes, Run Down Tanks - Blending Tanks - Hemispherical Tanks - Blow Cases - Acid Tanks, Compounding Kettles - Storage Tanks to 80,000 Barrels - Smoke Stacks and Breechings, etc.
THE BIGGS BOILER WORKS COMPANY, Buchtel and Bank Streets, AKRON, OHIO
Eastern Sales Office: 300 Madison Ave., New York
Western Sales Office: 35 South Dearborn St., Chicago

United States Sues Utah Over Show of Oil

WASHINGTON, April 13.—A rare legal battle over a mere showing of oil with United States on one side and Utah on the other, was begun in the Supreme Court of the United States April 9. It is to determine which sovereign owns the beds of the Colorado and San Juan rivers in Utah. The real parties in interest are the Midwest Refining Co., through one of its subsidiaries and The Texas Co.

If the two rivers are navigable then Utah owns the lands in the bed of the rivers and The Texas Co. wins in this litigation. If they are not navigable, then the United States, as the owner of lands on each bank, is the winner and the Midwest interest is triumphant.

The question arose when the Midwest interest, drilling under an exploration permit from the Department of the Interior under the national leasing law of 1920 obtained a showing of oil in the desolate Colorado River canon about 60 miles south of the Denver & Rio Grande Western railroad tracks. Immediately thereafter, Utah, on the theory that the Colorado was a navigable stream, granted leases in the bed of the stream itself. It did likewise with lands in the bed of the San Juan.

The Texas Production Co. has already begun suit against one of the permittees of the national government to prevent the occupation of the river bed or removal of oil or gas therefrom. The government permittees asked the Department of the Interior to intervene in the suit for the protection of the interest of the national government and its permittees. The river bed lands are important, if there is any oil or gas in the territory because they are the ones best adapted for drilling operations in that mountainous country. The Colorado runs through Utah for a distance of 320 miles and the San Juan for a distance of about 150 miles.

Suit by the United States against Utah was determined upon as the better way to handle the question.

Utah granted the leases without the consent of the United States. Inasmuch as the state claims the rivers are navigable and that therefore it owns the land in the beds of the streams, that was the only way it could proceed to assert its claim of proprietorship. If the streams are navigable the United States has control over their use, but the state has title to the lands under the water. If the streams are not navigable the owners of the lands on the banks own to the middle of each stream. At the point where the showing of oil has been obtained, there are unsurveyed lands of the United States on both banks.

INDEX TO ARTICLES

Selected Bibliography on Petroleum Technology

Editor's Note—The brief abstracts of current literature printed below are so arranged that they may be cut apart and mounted on 3" x 5" library indexing cards. The indexing numbers assigned bring the cards into logical sequence in the files. The "Decimal Index of Petroleum Technology" gives the key to the articles. This book is published exclusively by NATIONAL PETROLEUM NEWS as a service to its readers. Price $1.00. Abstracts started April 4, 1928.

Rather, Dr. J. B. **762.113**

"Acid Sludge Disposal Remains Unsolved Problem to Refining Plants."

National Petroleum News, Feb. 22, 1928, p. 75-78, as presented before Petroleum Division, A. I. M. E., New York, Feb. 22-23, 1928.

Dr. Rather, chief chemist, Standard Oil Co. of New York, discusses patents that have been taken out from time to time covering methods for dealing with the acid sludge nuisance and traces the history of the development of the problem. He dealt in considerable detail with various methods of recovery, forms of separation, systems of concentration, the fume nuisance that sometimes results from efforts to deal with the problem and some of the trouble in residence neighborhoods that are caused by the fumes.

Nash, A. E. **749.**

"Screened Radiant Heat, Its Application to the Oil Refining Industry."

National Petroleum News, Feb. 22, 1928, p. 71-74, as presented before the Petroleum Division, A. I. M. E., New York, Feb. 22-23, 1928.

Mr. Nash, an engineer with the Alcorn Combustion Co., discusses the application of screened and open radiant heat to heating surfaces in stills. He says: "We do not believe it either necessary or advisable to shield or screen radiant heat when properly controlled and applied. We do believe it essential to prevent the excessively hot gases of combustion from coming in contact with those parts of the heat-absorbing structure that are already receiving heat at high rates by radiation." Diagram of radiant heat furnace is given.

Barwick, John S. **305.111.31**

"The Salina Basin of North Central Kansas."

Bulletin of American Association of Petroleum Geologists, Vol. 12, No. 2, 22 p.

A pre-Pennsylvanian structural feature lying between the Nemaha granite ridge and the Barton arch, is shown to contain a thick geologic section divided into seven distinct lithologic units, three of which are definitely correlated with known strata elsewhere and four of which are give new names. The Abilene anticline, on which the McPherson gas field was discovered, is in the area discussed.

Dobbin, C. E., Hoots, H. W., and Dane, C. H. **305.111.52**

"Oil and Gas Possibilities of Bell Springs District, Wyo."

U. S. Geological Survey Bulletin 796-D. 1928, 201p.

Shows of either oil or gas, or both, are reported found in test drilling in a district where the dominant structural features consist of the elevated block of the Rawlins uplift, the less elevated and slightly domed segment underlying Separation Flats and the profound Rawlins-Bell Springs fault, which separates the two crustal blocks. Parts of the area are described as lending little encouragement to the idea of commercial oil accumulations, although the writers say it is possible oil and gas production may be found. Structural details are considered in relation to test drilling and the shows recorded.

Emig, Frank H. **990.5**

"Cost Finding Methods for Marketers and How to Use Them," Article 3.

National Petroleum News, March 28, 1928, p. 54-57.

This article deals with the office handling of daily sales, stock and cash transaction records received from the various selling units. Suitable stationary forms are discussed. The author tells how to fill in these forms. A chart of accounts is given with control numbers for assets, liabilities and net worth, income accounts, and expense accounts. A subsidiary classification gives numbers for direct wholesale expense, direct retail expense and sales and administration controlling accounts. How to use the chart of accounts is explained.

Musser, E. H. (California State Mining Bureau) **450.**

"Loss of Production Due to Improper Completion Method."

Summary of Operations California Oil Fields. Oct., 1927, Vol. 13, No. 4. pp 5-13

Successful completion of an oil well, it is pointed out, depends on several factors: (1)—exclusion of top water; (2)—completion at proper depth; (3)—the method of drilling through the oil zone; and, last, the manner of bringing-in the well. Specific examples are cited and definite recommendations made for washing, bailing and swabbing to gain a maximum of producing efficiency or increase individual well yields by recompleting.

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ON THE LAZY BENCH

National Petroleum News

First one for 1928

Jack Nourse, the Kansas City Oil man, told this one at the recent Independent Oil Men of America convention in Chicago. Last summer he was fishing with J. R. "Bat" Battenfeld in Minnesota. Fancy flies and plugs did not entice the fish so Mr. Nourse suggested using the lowly dew worm. Before the throwing in the first worm-baited hook the worm was properly immersed in modern day moonshine (those are Mr. Nourse's words). Then came the struggle. Both men worked heroically to land the fish. And when the battle moved to the surface behold there was a five-pound bass, and the worm was wrapped around the fish's neck.

* * *

In Memoriam

Little Willie from the mirror
Sucked the mercury all off,
Thinking in his childish error
It would cure his whooping cough.
At the funeral, Willie's mother
Smartly said to Mrs. Brown,
" 'Twas a chilly day for William
When the mercury went down."

—The Pure Oil News.

* * *

A feminine voice over the telephone: "Hello, the Club! Is my husband there? Not there, you say? But wait —I haven't even told you my name."

"Say, lady; there ain't nobody's husband here never!" was the darkey's reply.

—Stanolind Record.

* * *

First Stenog: "Did you observe Fire Prevention Week?"

Second Ditto: "Yes, I got into the office earlier; the boss was getting sore."

—The Pure Oil News.

* * *

Husband (reading the paper)—Four thousand three hundred and sixty-four elephants were needed last year to make billiard balls.

Wife—Isn't it wonderful that such great beasts can be taught to do such delicate work?

—Stanolind Record.

* * *

"John, what is this sales resistance we read so much about lately?"

"Sales resistance, my dear, is the triumph of mind over patter."

—The Pure Oil News.

Little Louis arrived at school, bringing with him a letter to his teacher. It was from his mother and read:

"Dear Teacher: My son Louis is a very delicate, nervous and timid child, and if he should be naughty—a thing that has occurred more than once—I wish you would punish the boy next to him, for that will frighten him so that he'll behave himself."

—Stanolind Record.

* * *

A Little Sense Left

"Hey, you!" yelled the traffic officer at the amorous driver, "why don't you use both hands?"

"I'm afraid to let go the steering wheel," grinned the irrepressible youth at the wheel.

—The Pure Oil News.

* * *

"The Smiths couldn't get into their apartment after they returned from their vacation."

"What's the matter? Lose their key?"

"No. They forgot to tell the boys to stop leaving the Sunday papers."

—Stanolind Record.

* * *

Bountiful Baa Lamb

Mary had a little lamb—
One day she clipped its tresses,
And found she had sufficient wool
For fifteen modern dresses.

—The Pure Oil News.

* * *

"I suppose you will want me to give up my job, Henry, when we are married?"

"How much do you earn at it?"

"Sixty a week."

"That isn't a job. That's a career. I wouldn't want to interfere with your career, dear."

—Stanolind Record.

* * *

At Her Word

"You must say 'our' " stormed Mrs. McSnorter at him, "I'm tired of hearing you say, 'my house,' and 'my car,' and 'my daughter.' The constant use of that word gets my goat."

The next morning, McSnorter arose in his usual rough frame of mind and spent about five minutes rummaging about the room.

Finally she turned over in bed and yelled at him, "What in the world are you looking for?"

"For our pants," answered McSnorter sourly.

—The Pure Oil News.

Refinery - Tank Wagon Markets

National Petroleum News

Weather Slows Demand but Prices Are Steady in Mid-Continent Markets

Staff Special
TULSA, April 14

A RETURN of winter to much of the middle west slowed activity in the Mid-Continent refinery market the second week of April, but the general price structure was steady.

It is doubtful, however, if the slower buying had any material effect on the actual movement of commodities. A majority of refiners asserted they had enough orders on their books to keep production moving evenly most of the week. They were inclined to consider the week as a "breathing spell," and before the cold wave Friday, had been anticipating for next week a renewal of the upward trend the market has been showing most of the year.

In the face of the lower temperatures, snow and rain in many northern states, the coming week may see little increase over this week in the total volume of new business placed.

A good percentage of goods moved this week on orders placed previously, is believed to be going into jobbers' storage. It will be recalled that March was an open month and gasoline gallonage was considerably better than February. Two or three refiners that have their own distribution, said March was better than March, 1927. This increase in gallonage naturally caused an increase in buying, and many jobbers broke away from their rigid hand-to-mouth buying policy of the winter and began to put some gasolines into storage at low prices.

Exporters continued to show interest in the gasoline market. Prices offered were for the most part under the refiners' ideas. Early in the week one export company bought approximately 500,000 gallons of 64-66, 375 end point gasoline in north Texas at 7.375 cents, the goods to move to the Gulf immediately to fill a cargo. Other exporters failed to meet this price, their best offer being 7.25 cents a gallon.

Later in the week one export company began to seek options in Oklahoma and Kansas for 1,000,000 gallons of 64-66, 375 e.p. gasoline at 7 25 cents a gallon, f.o.b. Group 3. The buyer said Saturday, however, that unless he could obtain the full amount he desired he probably would not buy.

Another export company sought approximately 500,000 gallons of U. S. Motor gasoline, and between 500,000 and 1,000,000 gallons of 64-66, 390 e.p. gasoline, prices offered being 6.50 cents a gallon for the U. S. Motor, and 6.875 cents for the 390 e.p. gasoline, f.o.b. Group 3. No purchases had been reported prior to April 14, but the representative of the buyer said he virtually had matters lined up for definite action early next week. There had been much speculation among the trade as to the buyer's chances of getting that amount of U. S. Motor at 6.50 cents a gallon.

Prices of lower grades of gasolines and naphthas advanced during the week. Demand was active and was easily sufficient to absorb the bulk of the comparatively small amount of goods now being made in the Mid-Continent. Buyers late in the week said they were having difficulty finding any goods available for spot shipment.

Natural gasoline prices surged upward under the stimulus of active buying by blenders and larger manufacturers who needed the goods to complete their own sales. Prices advanced this week 0.50 to 0.75 cent a gallon. This represents an advance since April 2 of a full cent a gallon on all grades.

Phillips Petroleum Co. was the most active buyer. This company's purchases were limited primarily to Grade AA. Purchases of this grade ranged from 4.50 to 5.25 cents a gallon. Most manufacturers were quoting 5.25 to 5.50 cents a gallon April 14 for Grade AA, with one or two asking even higher prices.

Grade AA buying gave other large manufacturers an opportunity to sell much of their Grade AA production, and to buy Grades BB and C to apply on their own orders where convenient. The BB and C grades consequently became scarce before the end of the week. Grade C moved above 4 cents a gallon. Manufacturers said inquiries for both grades C and BB were heavier than they had seen them in several weeks. Several manufacturers said Saturday they were completely sold up for the remainder of April.

Conflicting reports were obtained on kerosene. One export company was reported to have offered 4.50 cents a gallon for 41-43 prime white kerosene, f.o.b. north Texas, then 4.625 cents, and finally 4.75 cents a gallon, with little success. Another export company representative declared he had turned down goods offered him in north Texas at 4.625 cents.

Domestic buying was comparatively good from the regular trade. Much of the advance in price this month was due to active buying for speculation by resale agents. Two or three refiners who booked brokers' orders said they were having some difficulty getting shipping instructions.

One Oklahoma refiner Friday sold 25 cars of 41-43 water white kerosene to an eastern Standard company at 5 cents a gallon, shipment to be completed before May 1. Other refiners were quoting 5 cents a gallon for spot shipment, and apparently were not booking new orders for deferred shipment. They have been watching kerosene stocks closely, and it is freely predicted that if the stocks are reduced for the next two weeks as much as they were reduced the first week in April, a situation will develop similar to the one two years ago when an acute shortage caused abnormally high prices.

THE stove distillate season is virtually at an end. The latest cold wave may give jobbers an opportunity to clean out their stocks, but it is not likely any new buying will be done. Prices have remained unchanged for both grades of distillates in Oklahoma for the past several weeks.

Gas oils continued to be in good demand from both industrial gas companies and from refiners that operate cracking units. Prices were well

Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, F. O. B. refinery, except where $ is shown

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

GASOLINE AND NAPHTHA

PENNSYLVANIA	Prices Apr. 16	Prices Apr. 9	Prices Apr. 2
52-54 Naphtha	8.25 – 8.50	7.75 – 8.50	7.75 – 8.25
54-56 Naphtha	8.50 – 9.00	7.75 – 8.50	7.75 – 8.50
58-60 U.S. Motor 437 e.p.	8.50 – 9.25	8.50 – 9.00	8.50 – 8.75
60-62 400-410 e.p. gasoline	9.00 – 9.75	8.75 – 9.50	9.00 – 9.50
64-66 390 e.p. gasoline	9.50 –10.00	9.25 –10.00	9.50 –10.25
68-70 Str.-run gas. 350-360 e.p.	10.25 –11.00	10.00 –10.75	10.50 –11.50
OKLAHOMA			
48-50 450 e.p. naphtha	†6.375– 6.50	†6.25	†6.00 – 6.25
50-52 450 e.p. naphtha	†6.375– 6.50	†6.25	†6.00 – 6.25
56-58 450 e.p. gasoline	6.375– 6.50	**6.25 – 6.375	**6.00 – 6.25
58-60 450 e.p. gasoline	6.50	**6.375– 6.50	**6.25
64-66 390 e.p. gasoline	6.875	6.875	6.75 – 6.875
68-70 350-360 e.p. gasoline	7.125– 7.375	7.125– 7.375	7.00 – 7.25
OKLAHOMA (Weighted Average Prices)			
58-60 U.S. Motor, 437 e.p.	6.8083	6.7058	6.5360
60-62 437 e.p. gasoline	6.9062	6.8750	6.6318
60-62 400 e.p. gasoline	7.0417	6.9357	6.7213
64-66 375 e.p. gasoline	7.2500	7.2083	7.1875

Above are weighted average prices, current week's prices being effective on Saturday, instead of Monday, the last day on which weighted averages are available for publication in this table. Weighted average prices for the current Monday are published on page 37 of this issue. The two previous week's prices shown are corrected to show Monday's prices, effective on the dates shown at the top of the columns.

KANSAS* (F. O. B. refinery Kansas destination)			
58-60 U.S. Motor 437 e.p.	6.875– 7.00	6.875	6.75 – 6.875
60-62 400 e.p. gasoline	7.25	7.125– 7.25	7.125– 7.25
64-66 375 e.p. gasoline	7.50	7.50	7.50
NORTH TEXAS			
48-52 450 e.p. naphtha	†6.25 – 6.50	†6.125	†6.00 – 6.125
56-58 450 e.p. gasoline	†6.25 – 6.50	†6.125– 6.25	†6.00 – 6.125
58-60 450 e.p. gasoline	†6.375– 6.50	†6.25 – 6.375	†6 125– 6.25
58-60 U.S. Motor 437 e.p.	6.75	6.625– 6.75	6.50
60-62 400 e.p. gasoline	6.875– 7.00	6.75	6.75
64-66 390 e.p. gasoline	7.00 – 7.125	7.00	6.75 – 7.00
64-66 375 e.p. gasoline	7.25 – 7.375	7.25 – 7.375	7.00 – 7.25
68-70 350-360 e.p. gasoline	7.375– 7.50	7.375– 7.50	7.125– 7.25
NORTH LOUISIANA (N. La., Ark. and Miss. destination)			
58-60 U.S. Motor gasoline	7.25	7.00 – 7.25	6.75 – 7.25
ARKANSAS (Arkansas destination only)			
56-58 450 e.p. gasoline	6.50	6.50	6.25 – 6.50
58-60 450 e.p. gasoline	6.75	6.75	6.25 – 6.50
58-60 U.S. Motor 437 e.p.	7.25	7.00 – 7.25	6.75
CALIFORNIA			
*54-58 U.S. Motor 437 e.p.	8.00 –11.00	8.00 –10.00	7.50 – 9.00
*58-60 U.S. Motor 437 e.p.	10.50 –11.50	9.00 –10.00	8.50 –10.00
*42-45 Eng. dis. 445-480 e.p.	6.50 – 7.00	6.50 – 7.00	6.50 – 7.00

*3c tax to be added if used in state.

NATURAL GASOLINE

(Note: End point of all grades, not over 375 F. Since Oct. 1, 1927 naturals must pass corrosion test.)

OKLAHOMA			
Grade AA, 80-87.9, 90% Recovery	5.25 – 5.50	4.375– 4.625	4.00 – 4.25
Grade A, 72-79.9, 90% Recovery	5.25 – 5.50	4.625– 4.75	4.375
Grade BB, 84-92, 85% Recovery	4.375– 4.50	3.50 – 3.75	3.375– 3.50
Grade B, 76-83.9, 85% Recovery	4.375– 4.50	3.875	3.75 – 3.875
Grade C, 80-90, 78% Recovery	4.25	3.50 – 3.75	3.25
NORTH TEXAS (F. O. B. Breckenridge)			
Grade AA, 80-87.9, 90% Recovery	5.25 – 5.50	**4.375– 4.625	**4.125– 4.375
Grade A, 72-79.9, 90% Recovery	5.25 – 5.50	**4.375– 4.625	**4.125– 4.375
Grade BB, 84-92, 85% Recovery	4.375– 4.50	**3.50 – 3.75	**3.50 – 3.625
Grade B, 76-83.9, 85% Recovery	4.375– 4.50	**3.50 – 3.75	**3.50 – 3.625
Grade C, 80-90, 78% Recovery	4.25	**3.50 – 3.75	**3.25
NORTH LOUISIANA (F. O. B. Monroe District)			
Grade AA	†5.50 – 5.75	†4.75 – 5.00	†4.625– 4.75
Grade BB	†4.50 – 4.75	†4.00 – 4.25	†3.875– 4.00
Grade C	†4.25 – 4.50	†4.00	†3.625– 3.75
CALIFORNIA			
75-85, 375-390 e.p. blend	8.50 – 9.50	9.00 – 9.50	8.50 – 9.00

MOTOR FUEL BLENDS

PENNSYLVANIA				
68-70 Blend 437 e.p.	Prices	.....	.....	.....
64-66 Blend 437 e.p.	Temporarily	.....	.....	.....
60-62 Blend 437 e.p.	Discontinued	.....	.....	.....
OKLAHOMA				
64-66 Blend 437 e.p.	†6.375– 6.50	†6.375– 6.50	†6.125– 6.375	

BURNING OILS

PENNSYLVANIA			
45 w.w. kerosene	6.375– 6.50	6.25 – 6.50	6.125– 6.50
46 w.w. kerosene	6.625– 7.00	6.50 – 7.00	6.50 – 6.75
47 w.w. kerosene	6.875– 7.25	6.75 – 7.25	6.75 – 7.25
300 mineral seal	7.25 – 7.50	7.25 – 7.50	7.00 – 7.25
OKLAHOMA			
41-43 w.w. kerosene	5.00	4.875– 5.00	4.50
42-44 w.w. kerosene	5.25 – 5.50	5.125– 5.25	5.00
KANSAS (F. O. B. refinery Kansas destination)			
41-43 w.w. kerosene	5.25 – 5.375	5.125– 5.25	4.875– 5.125
42-44 w.w. kerosene	5.50 – 5.625	5.50 – 5.625	5.50 – 5.625
NORTH TEXAS			
40-42 w.w. kerosene	†4.50 – 4.625	†4.50	†4.125
41-43 w.w. kerosene	†4.75 – 5.00	†4.75 – 4.875	†4.375– 4.50
NORTH LOUISIANA (N. La. Ark. and Miss. destination)			
41-43 w.w. kerosene	5.25 – 5.50	5.00	4.875– 5.00
ARKANSAS (Arkansas destination only)			
42-44 kerosene	5.50	5.25	5.00 – 5.25
CALIFORNIA			
38-40 w.w. kerosene	5.00 – 5.50	5.00 – 5.50	5.00 – 5.50

NEUTRAL OIL

PENNSYLVANIA Vis.	(Viscosity at 70°F.)		
200 No. 3 Assoc. Filt.	33.00 –34.00	33.00 –34.00	33.00 –33.50
180 No. 3 Assoc. Filt.	30.50 –31.50	31.00 –31.50	30.00 –31.00
150 No. 3 Assoc. Filt.	27.00 –27.50	27.00 –27.50	27.00 –27.50
(Non Viscous)			
34 Grav. 330-340 Flash	7.00 – 8.00	7.00 – 8.00	7.00 – 8.00
36 Min. Neut. 300-305 Flash	6.50 – 7.50	6.00 – 7.00	6.00 – 7.50
****OKLAHOMA Vis. Color**	**(Viscosity at 100°F.)**		
100—No. 2	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50
150—No. 3	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
150—No. 4	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
180—No. 3	9.00 –10.00	9.00 –10.00	9.00 –10.00
180—No. 4	9.50 – 9.75	9.50 – 9.75	9.50 – 9.75
180—No. 5	9.25 – 9.75	9.25 – 9.75	9.25 – 9.75
200—No. 3	9.50 –11.00	9.50 –11.00	9.50 –11.00
200—No. 4	9.50 –10.75	9.50 –10.75	9.50 –10.75
200—No. 5	9.00 –10.50	9.00 –10.50	8.50 –10.50
220—No. 3	12.50 –13.50	12.50 –13.50	12.50 –13.50
220—No. 4	12.25 –12.50	12.25 –12.50	12.25 –12.50
220—No. 5	11.50 –12.00	11.50 –12.00	11.50 –12.00
240—No. 3	13.50 –14.00	13.50 –14.00	13.50 –14.00
240—No. 4	13.25 –13.50	13.25 –13.50	13.25 –13.50
240—No. 5	12.00 –13.00	12.00 –13.00	12.00 –13.00
280—No. 3	15.50 –16.50	15.50 –16.50	15.50 –16.50
280—No 4	15.25	15.25	15.25
280—No. 5	14.00 –15.00	14.00 –15.00	14.00 –15.00
300—No. 5-6	17.00	17.00	17.00
GULF COASTAL Vis. Color	**(Viscosity at 100°F., pour test 0)**		
100—No. 2 Unfilt. Pale	7.00 – 7.50	7.00 – 7.50	7.00 – 7.50
200—No. 3 Unfilt. Pale	9.50 –10.25	9.50 –10.25	9.50 –10.25
300—No. 3 Unfilt. Pale	10.50 –11.25	10.50 –11.25	10.50 –11.25
500—No. 3½ Unfilt. Pale	12.50 –13.25	12.50 –13.25	12.50 –13.25
750—No. 4 Unfilt. Pale	14.50 –15.50	14.50 –15.50	14.50 –15.50
200—No. 5½ Red Oil	7.50 – 8.25	7.50 – 8.25	7.50 – 8.25
300—No. 5½ Red Oil	8.75 – 9.25	*8.75 – 9.25	8.75 – 9.25
500—No. 6 Red Oil	10.00 –10.50	10.00 –10.50	10.00 –10.50
750—No. 6 Red Oil	12.75 –13.50	12.75 –13.50	12.75 –13.50
CALIFORNIA Vis. Color	**(Viscosity at 100°F.)**		
100—No. 3	9.50 –10.00	9.50 –10.00	9.50 –10.00
200—No. 3	11.50 –12.00	11.50 –12.00	11.50 –12.00
300—No. 3	13.00 –13.50	13.00 –13.50	13.00 –13.50
450—No. 3-3½	15.50 –16.00	15.50 –16.00	15.50 –16.00
550—No. 3-3½	16.50 –17.00	16.50 –17.00	16.50 –17.00
600—No. 3-3½	17.00 –17.50	17.00 –17.50	17.00 –17.50
200—No. 5	11.00 –11.50	11.00 –11.50	11.00 –11.50
300—No. 5	12.00 –12.50	12.00 –12.50	12.00 –12.50
400—No. 5	14.00 –14.50	14.00 –14.50	14.00 –14.50
500—No. 5	15.00 –15.50	15.00 –15.50	15.00 –15.50
600—No. 5	16.00 –16.50	16.00 –16.50	16.00 –16.50
700—No. 7	18.00 –18.50	18.00 –18.50	18.00 –18.50

CYLINDER STOCKS

****OKLAHOMA**			
190-200 Vis. at 210° Brt. St.	31.00 –32.00	31.00 –32.00	31.00 –32.00
150-160 Vis. at 210° Brt. St.	21.00 –24.00	21.00 –24.00	21.00 –24.00
600 E St. 140-150 Vis.-210°	17.00 –18.00	17.00 –18.00	17.00 –18.00
600 St. Ref. Olive Green	8.50 –10.00	8.50 –10.00	8.50 –10.00
600 St. Ref. Dark Green	6.50 – 8.00	6.50 – 8.00	6.50 – 8.00
Black Oil	5.00	5.00	5.00
PENNSYLVANIA	**(1-inch Immersion Test)**		
600 Steam Refined	9.25 –10.50	9.00 –10.50	9.00 –10.50
650 Steam Refined	10.50 –12.50	10.50 –12.50	10.50 –12.50
600 Flash	14.00 –16.50	15.00 –16.50	15.00 –16.00
625 Flash	24.00 –27.50	24.00 –27.50	24.00 –27.50
600 Warren E	15.50 –17.00	16.00 –17.00	16.00 –17.00
600 Oil City E	15.00 –16.25	15.00 –16.25	15.00 –16.00
600 D Filtered	22.00 –23.50	22.00 –23.50	22.50 –23.00
Cold Test Stock, 40-50 p. p., 140-150 vis. at 210°, 540-550 flash, No. 8 color	27.00 –28.00	27.00 –28.00	27.00 –28.00
40-50 p.p., 140-150 vis. at 210, 540-550 flash, No. 6-6½ color diluted	25.00 –26.00	24.50 –26.00	25.00 –26.00

(Note—Prices of total immersion test goods average 1 to 3 cents per gallon higher)

†PRICES NOMINAL ††ONLY ONE REFINER QUOTING *QUOTATIONS ONLY **REPRESENTS BOTH SALES AND QUOTATIONS

pegged at 2.625 cents a gallon for the ordinary 32-36 dark gas oil. Little attention is being paid to the color or cold tests. Rains in Arkansas may temporarily slow the gas oil market in that district, but refiners are expecting a good seasonal demand from rice growers. Last year the heavy rains and floods gave the rice growers more water than they wanted without having to pump it, and shipments of gas oil from Arkansas and Louisiana refineries suffered accordingly.

Oklahoma refiners are encountering some competition on fuel oils. Sales of 18-22 fuel oil at 75 and 77.5 cents a barrel, f.o.b. Group 3, basis, have been made this week by refiners in other territories. Oklahoma refiners have made no changes in their prices, the lower gravities being 80 cents minimum.

Fuel oil buying has been comparatively good most of the week. A few refiners said their fuels were not moving as well as they had expected and that inquiries were not numerous. Others declared their business was good and that they were behind on shipments.

No changes have been made in Oklahoma neutral oils or cylinder stocks. Orders continued to come in fairly well, a majority of refiners said. Bright stocks were not as active as in March but prices have not been changed.

Most Oklahoma refiners making wax report they are still sold up. The prevailing quotations were 3 to 3.25 cents a pound for 124-125 white crude scale wax.

Los Angeles Shipments

LOS ANGELES, April 14.—Eighteen tankers left Los Angeles harbor week ended April 7 for points outside of Pacific coast trade territory, carrying a total of 1,175,856 barrels of petroleum products, or a daily average of 167,979 barrels, a decrease when compared with previous week's total of 1,218,894 barrels, or a daily average of 174,128 barrels.

Total movement included 159,025 barrels of crude, 471,635 barrels of fuel, 299,344 barrels of gasoline, 233,212 barrels of kerosene and 22,640 barrels of Diesel. Pacific foreign points drew 78,591 barrels of crude, 471,635 barrels of fuel, 223,212 barrels of kerosene, 218,865 barrels of gasoline and 22,640 barrels of Diesel. Products going to Atlantic domestic included 80,434 barrels of crude and 80,479 barrels of gasoline. No tankers left for Atlantic foreign.

KANSAS CITY, April 12.—The Lion Oil Refining Co., with headquarters here and a refinery at El Dorado, Ark., is in no way connected with the Lion Oil Co., Chicago jobbing company, the story of whose suit against the Sinclair Refining Co., appeared in the April 4 issue of NATIONAL PETROLEUM NEWS, page 103.

California Refiners Holding Their Gasoline

LOS ANGELES, April 14

REFINERS continued this week to refuse to sell export U. S. Motor gasoline at less than 7 cents. Some companies are refusing to quote, although they tell the buyer they will give serious consideration to a firm bid of 7.50 cents. They are holding for higher prices.

On the Atlantic Coast, California Grade U. S. Motor is selling in tank cars at 9.00 to 9.25 cents, and California refiners had expected this figure to reach 9.50 cents. No actual orders were placed for cargoes this week, as far as is known in Los Angeles.

The gasoline tank car market is also firm, with stocks of small Independent refiners running low. Shipments within the state are moving at 10.00 to 11.50 cents, without tax. Most of the major refiners refuse to ship in this trade at less than 12.50 cents. Gasoline in tank cars to points outside the state is moving at 7.50 cents and up, according to where it is going and competition. Oklahoma refiners are shipping some gasoline to Arizona points, forcing southern California refiners to meet their prices.

Completion of new wells making considerable gas at Long Beach is bringing more spot natural gasoline to the market, and for that reason the spot price is slightly off. But only a few cars can be purchased at the low price, it is likely, before the market swings back to 9.00 to 9.50 cents. A few cars were sold the past ten days at 8.50 cents.

Fuel oil is not moving freely, but the refiners want at least 75 cents for cargo lots, and are willing to carry their stocks awhile longer. There is ample storage space in California. There is no change in tank car fuel. Gas oil is scarce without change in quotations. Some refiners are saving their gas oil for cracking.

Refinable crude is in demand in the spot market, and the little product for sale commands a premium of at least 10 cents a barrel.

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Refinery Markets on Wax and Heavy Oil Products

Prices given below are in cents per gallon, F. O. B. refinery, except where $ is shown

(For quick reference to Refinery Prices, get the OIL PRICE HANDBOOK, published annually)

WAX

PENNSYLVANIA	Prices Apr. 16	Prices Apr. 9	Prices Apr. 2
Per Pound, New York			
122-124 white crude scale	3.50	3.25 – 3.375	3.25 – 3.50
124-126 white crude scale	3.50	3.25 – 3.50	3.25 – 3.50
**OKLAHOMA			
124-126 White Crude Scale	3.00 – 3.25	3.125– 3.25	3.00 – 3.25
CALIFORNIA			
White crude scale, per pound, ton lots	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50

FUEL OIL

PENNSYLVANIA			
36-40 fuel oil	5.00 – 5.25	4.875– 5.25	5.00 – 5.25
30-34 fuel oil	4.875– 5.25	4.75 – 5.125	4.75 – 5.12
28-32 fuel oil	4.875– 5.00	4.75 – 5.00	4.75 – 5.00
OKLAHOMA			
38-40 straw distillate	3.00 – 3.125	3.00 – 3.125	3.00 –3.12
36-38 straw distillate	3.00	3.00	3.00
32-36 gas oil, straw	†2.625– 2.75	†2.625– 2.75	†2.625–2.75
32-36 dark gas oil	2.625	2.625	2.62
28-30 fuel oil (in bbls.)	$0.95 – 1.00	$0.95 – 1.00	$0.95 –1.00
26-28 fuel oil (in bbls.)	$0.90 – 0.925	$0.90 – 0.925	$0.90 –0.92
24-26 fuel oil (in bbls.)	**$0.85– 0.90	**$0.85– 0.90	**$0.85 –0.90
22-26 fuel oil (in bbls.)	**$0.80– 0.825	**$0.80– 0.825	**$0.825–0.85
18-22 fuel oil (in bbls.)	**$0.80	**$0.80	**$0.80 –0.82
16-18 fuel oil (in bbls.)	**$0.80	**$0.80	**$0.80
14-16 fuel oil (in bbls.)	**$0.80	**$0.80	**$0.80

Note: Zero cold test low flash gas oils sell for ¼ cent more per gallon. Zero cold test fuel oils sell for 5 to 10 cents more per bbl.

KANSAS *(F. O. B. refinery Kansas destination.)			
38-40 straw distillate	3.25 – 3.50	3.50	3.50
36-38 straw distillate	3.00	3.25	3.25
32-36 gas oil	2.875	2.875	2.75 – 2.875
24-26 fuel oil	*$0.85	$0.90 – 1.00	$0.90 – 1.00
18-22 fuel oil	*$0.90– 1.00	*$0.85	*$0.85
NORTH TEXAS			
38-40 straw distillate	3.00 – 3.125	3.00 – 3.125	3.00 – 3.125
32-36 gas oil, cracked	2.375	2.375	2.375
32-36 gas oil, uncracked	2.375– 2.50	2.375– 2.50	2.375
24-26 fuel oil (in bbls.)	$0.775– 0.80	$0.80	$0.80

GULF COASTAL	Prices Apr. 16	Prices Apr. 9	Prices Apr. 2
Fuel (in bbls.)	$1.40 –$1.50	$1.40 –$1.50	$1.40 – 1.50
Gas oil	4.375– 4.50	4.375– 4.50	4.375– 4.50
NORTH LOUISIANA (N. La., Ark. and Miss. destination)			
32-36 gas oil, dark	2.625– 2.75	2.625– 2.75	2.625– 2.75
32-36 gas oil, straw	2.75	2.75 – 2.875	2.75 – 2.875
16-20 fuel oil (in bbls.)	$0.85 – 0.90	$0.85 – 0.90	$0.85 – 0.90
ARKANSAS (Arkansas destination only)			
32-36 gas oil	2.75 – 3.00	2.75 – 3.00	2.75 – 3.00
32-36 gas oil, straw	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25
28-32 gas oil	2.75	2.50 – 2.75	2.50 – 2.75
Road Oil	$1.15	$1.15	$1.15
CALIFORNIA* (F. O. B. San Joaquin Valley. At San Francisco, 4c per bbl. more)			
14-18 fuel oil (in bbls.)	$0.70 –$0.80	$0.70 – 0.80	$0.65 – 0.75
14-18 Bunker oil (in bbls.)	$0.80 –$1.00	$0.80 – 1.00	$0.80 – 1.00
30-34 gas oil (in bbls.)	$1.05 –$1.10	$1.05 – 1.10	$1.05 – 1.10
27 Plus Diesel oil (in bbls.)	$0.90 –$1.00	$0.90 – 1.00	$0.90 – 1.00

PETROLATUMS

PENNSYLVANIA (In barrels, carload lots, f.o.b. refinery. In tank cars ⅝c to ¾c per pound less.)			
Snow White	7.75 – 8.375	7.75 – 8.375	7.75 – 8.375
Lily White	6.75 – 7.375	6.75 – 7.375	6.75 – 7.375
Cream White	5.75 – 6.375	5.75 – 6.375	5.75 – 6.375
Blonde	4.50	4.50	4.50
Light Amber	3.00 – 3.625	3.00 – 3.625	3.00 – 3.625
Amber	2.75 – 3.375	2.75 – 3.375	2.75 – 3.375
Red	2.50 – 3.125	2.50 – 3.125	2.50 – 3.125
Green No. 5 color	2.50	2.50	2.50

**PETROLEUM COKE

OKLAHOMA (Per ton in car lots)			
Lump	$4.50 –$5.00	$4.50 – 5.00	$4.50 – 5.00
Still run	$2.75 –$3.00	$2.75 – 3.00	$2.75 – 3.00
Breeze	$1.75 –$2.00	$1.75 – 2.00	$1.75 – 2.00

†PRICES NOMINAL ††ONLY ONE REFINER QUOTING *QUOTATIONS ONLY **REPRESENTS BOTH SALES AND QUOTATIONS

Week's Price Changes Tank Wagon Markets

Gasoline Changes

Standard of New York—The 19 cent t. w. price of gasoline and 22 cent s. s. price at Burlington, as published in the tank wagon table on the opposite page, went into effect **April 2.**

Standard of Indiana—T. w. and s. s. prices gasoline advanced 2 cents, Kansas City, to 16.9 cents and 18.9 cents respectively, including 2 cent state tax and 1 cent city tax, **April 12.**

Standard of Nebraska—T. w. prices gasoline advanced to normal throughout Nebraska, **April 12.** Among cities advanced were Norfolk, which was advanced ¾ cent, and McCook which was advanced 2 cents, making t. w. price both points 16.75 cents, including 2 cent state tax. T. w. at Omaha, North Platte and Scottsbluff was unchanged. S. s. prices at all points unchanged.

Standard of Louisiana—T. w. and s. s. prices gasoline advanced 1 cent, Little Rock, to 21 cents and 22 cents respectively, including 5 cent state tax, **April 5.**

T. w. price only of gasoline advanced 1 cent, Louisiana, **April 4.**

These changes were made in Tennessee, **April 6:** Memphis s. s. price only advanced ½ cent, to 19 cents; Nashville and Bristol s. s. price only cut 1 cent, to 20 cents and 21 cents respectively; Chattanooga and Knoxville t. w. cut 1.5 cents and s. s. cut 2.5 cents, making t. w. both points 18 cents, and s. s. 20 cents, including 3 cents state tax.

Standard of New Jersey—S. s. price only of gasoline reduced 3 cents, Salisbury, to 20 cents, **Feb. 24.** S. s. price only reduced 3 cents, Mt. Airy, to 20 cents, **March 5.**

Magnolia Petroleum—T. w. price gasoline cut 3 cents, s. s. cut 2 cents, Muskogee, to 14 cents and 16 cents respectively, including 3 cent state tax, **April 6.**

T. w. price gasoline advanced 3 cents, and s. s. price 2 cents, Muskogee, to 17 cents and 18 cents respectively, **April 10.**

S. s. price only of gasoline advanced 1 cent, Fort Smith, to 20 cents, **April 7.**

* * *

Kerosene Changes

Standard of New Jersey—Kerosene advanced 2 cents, Annapolis, Washington and Norfolk, bringing t. w. to 14 cents, and also at Baltimore, bringing t. w. to 12 cents, **April 5.**

N. Y. Wax Market Up 1/8 to 1/4 Cent

NEW YORK, April 14.—Interest in the New York wax market was revived this week and prices for all grades of scale and fully refined advanced 0.125 to 0.25 cent a pound. Little actual buying was reported. At the same time not much goods either for spot or deferred shipment was being offered, according to reports from several sources.

The elimination of low priced Polish wax from the United Kingdom market was asserted to have helped the New York market materially.

One large refiner of white crude scale reported he had turned down offers this week for approximately 250 tons for April delivery at 3.375 cents a pound. He also reported having already booked a fair volume of orders at this price. Buyers willing to pay 3.25 cents reported they were having little success in filling their requirements. Purchase of one car of 124-126 crude scale at 3 cents a pound was reported by one buyer, but the transaction was not considered a representative market sale inasmuch as the goods was off white.

In the fully refined market, 125-127 continued extremely scarce and most

(Continued on Page 112)

Tank Wagon, Service Station Markets for Gasoline and Kerosene In United States Territories and Canada

(As posted by principal marketing companies)

(OIL PRICE HANDBOOK has t.w. and s.s. markets for whole year arranged for quick reference)

These Prices In Effect April 16, 1928

S.O. NEW JERSEY TERRITORY

	Gasoline			Oil
	Total			
	T.W.	Tax	T.W.	S.S.	T.W.
Atlantic City, N. J.	16	2	18	20	14
Newark, N. J.	16	2	18	20	14
Annapolis, Md.	16	4	20	23	14
Baltimore, Md.	16	4	20	23	12
Cumberland, Md.	16	4	20	23	14
Washington, D. C.	16	2	18	21	14
Danville, Va.	16	5	21	*	14
Norfolk, Va.	16	5	21	24	14
Richmond, Va.	14	5	19	22	14
Roanoke, Va.	16	5	21	24	14
Petersburg, Va.	16	5	21	24	14
Charleston, W. Va.	16	4	20	23	14
Keyser, W. Va.	16	4	20	23	14
Parkersburg, W. Va.	14	4	18	21	14
Wheeling, W. Va.	16	4	20	23	14
Charlotte, N. C.	16	4	20	23	14
Hickory, N. C.	16	4	20	20	14
Mt. Airy, N. C.	16	4	20	20	14
Salisbury, N. C.	16	4	20	20	14
Charleston, S. C.	15	5	20	23	14
Columbia, S. C.	15	5	20	23	14

*Dealers set own prices. S. O. New Jersey does not operate station.

Note: Above gasoline and oil prices in N. Carolina include ¼c per gal. inspection fee and in S. Carolina ½c.

S. O. NEW YORK

Due to local price conditions at many points in S. O. New York territory, actual prices on both gasoline and kerosene are being made at under the posted tank wagon prices published below.

New York City	17	0	17	*19	15
Albany, N. Y.	17	0	17	19	15
Buffalo, N. Y.	16	0	16	19	14
†Rochester, N. Y.	16	0	16	19	12
Syracuse, N. Y.	16	0	16	19	15
Boston, Mass.	17	0	17	19	15
Augusta, Me.	17	4	21	23	15
Manchester, N. H.	15	4	19	22	15
Burlington, Vt.	16	3	19	22	15

*The Standard of New York does not operate stations in New York City. This figure is the retail price of a principal station operator selling Socony gasoline.

†It is reported that S. O. New York is selling a second grade of gasoline at Rochester, 3c below the above posted prices which apply on its Socony grade.

ATLANTIC REFINING

Pittsburgh, Pa.	16	*	16	*22	13
Philadelphia, Pa.	16	*	16	*22	13
Allentown, Pa.	16	*	16	*22	13
Erie, Pa.	12	*	12	*18	13
Scranton, Pa.	16	*	16	*22	13
Altoona, Pa.	16	*	16	*22	13
Dover, Del.	16	3	19	22	13
Wilmington, Del.	16	3	19	22	12
Providence, R. I.	19	2	21	21	15
Boston, Mass.	19	0	19	19	15
Springfield, Mass.	19	0	19	19	15
Worcester, Mass.	19	0	19	19	15
Hartford, Conn.	19	2	21	21	14
New Haven, Conn.	19	2	21	21	15

*3-cent state tax is collected by retail dealer and paid by him directly to state.

S. O. KENTUCKY

Lexington, Ky.	13	5	18	21	15.5
Louisville, Ky.	13	5	18	21	15
Covington, Ky.	14	5	19	22	15.5
Clarksdale, Miss.	14	4	18	20	10
Gulfport, Miss.	††15.5	4	††19.5	21.5	14
Jackson, Miss.	14	4	18	20	12
Natchez, Miss.	13.5	4	17.5	19.5	14
Vicksburg, Miss.	13.5	4	17.5	19.5	14
Birmingham, Ala.‡	16	4	20	22	14
Mobile, Ala.‡	16	4	20	22	14
Montgomery, Ala.*‡	17	4	21	23	15.5
Atlanta, Ga.	16	4	20	22	†15
Augusta, Ga.	16	4	20	22	†16.5
Macon, Ga.	16	4	20	22	†16.5
Savannah, Ga.	14	4	18	20	†14.5
Jacksonville, Fla.°	14	5	19	21	13.5
Miami, Fla.°	16	5	21	23	14.5
Tampa, Fla.°	14	5	19	21	13
Pensacola, Fla.°	**15	5	**20	22	13

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosene at Montgomery included.

‡Alabama gasoline prices include 1/40 of 1c inspection fee. Mobile gasoline prices include 1c city tax.

†Georgia kerosene prices include 1c state tax.

°Florida gasoline prices include ½c inspection fee.

**Both tank wagon prices include 1c city tax at Pensacola, which went into effect Oct. 15, 1926.

††Both tank wagon prices at Gulfport include Harrison county privilege tax of 2c.

S. O. INDIANA

	Gasoline			Oil
	Total			
	T.W.	Tax	T.W.	S.S.	T.W.
Chicago, Ill.	14	0	14	16	12
Decatur, Ill.	14.2	0	14.2	16.2	12.1
E. St. Louis, Ill.	13.1	0	13.1	15.35	11.2
Joliet, Ill.	14.4	0	14.4	16.4	12.3
Peoria, Ill.	14.2	0	14.2	16.2	12.1
Quincy, Ill.	14.2	0	14.2	16.2	11.9
Indianapolis, Ind.	14.2	3	17.2	19.2	13.2
Evansville, Ind.	14	3	17	19	13
South Bend, Ind.	14.4	3	17.4	19.4	13.4
Detroit, Mich.	14.8	3	17.8	19.8	13.7
Grand Rapids, Mich.	14.7	3	17.7	19.7	13.6
Saginaw, Mich.	14.9	3	17.9	19.9	13.8
Green Bay, Wis.	14.6	2	16.6	18.6	12.4
Madison, Wis.	14.3	2	16.3	18.3	12.1
Milwaukee, Wis.	14.1	2	16.1	18.1	11.9
La Crosse, Wis.	15.2	2	17.2	19.2	13
Minneapolis, Minn.	14	2	16	18	12.9
Duluth, Minn.	13.5	2	15.5	17.5	12.9
Mankato, Minn.	12.1	2	14.1	16.1	12.7
Des Moines, Ia.	12.9	3	15.9	17.9	12.3
Davenport, Ia.	14.5	3	17.5	19.5	12.3
Sioux City, Ia.	14.1	3	17.1	19.1	11.9
Mason City, Ia.	14.5	3	17.5	19.5	12.3
St. Louis, Mo.	*13.6	2	15.6	17.9	11.3
Kansas City, Mo.	†14.9	2	16.9	18.9	10.6
St. Joseph, Mo.	†12.5	2	14.5	16.5	11.2
Fargo, N. D.	16.9	2	18.9	20.9	14.9
Grand Forks, N. D.	17.2	2	19.2	21.2	15.2
Minot, N. D.	16.9	2	18.9	20.9	14.9
Pierre, S. D.	15.5	4	19.5	21.5	13.9
Huron, S. D.	15.5	4	19.5	21.5	13.9
Wichita, Kans.	12.8	2	14.8	16.8	10.8
Bartlesville, Okla.	12.5	3	15.5	17.5	10.5

S. O. Indiana's quantity discount schedule on tank wagon deliveries of gasoline outside the city of Chicago is 1c for 50 gals. or more at one delivery; 1½c for 6,000 gals. or more a month; 2c for 10,000 gals. or more a month, and 3c for 15,000 gals. or more a month.

In Chicago, above discounts apply, except that minimum required quantity to get the 1c discount is 100 gals., instead of 50 gals. This 1c discount applies on quantities of 100 gals. and over, in addition to regular Q.D.A. discounts applying thru rest of territory, as stated above.

Service station discount is 2c per gal. to consumers of 200 gals. or more a month, or 2400 gals. per year.

Discount on kerosene is 1c on 50 gal. dumps throughout territory.

*Includes city tax of ½c.

†Includes city tax of 1c.

S. O. NEBRASKA

Omaha, Neb.	13.25	2	15.25	17.25	12.25
McCook	14.75	2	16.75	16.75	11.50
Norfolk	14.75	2	16.75	16.75	12.75
North Platte	15.75	2	17.75	18.5	13.50
Scottsbluff	15.25	2	17.25	19.25	13.00

CONTINENTAL OIL

Denver, Colo.	14	3	17	19	14.5
Pueblo, Colo.	14	3	17	19	14.5
Grand Junction, Colo.	17.5	3	20.5	22.5	18
Casper, Wyo.	14	3	17	19	13
Cheyenne, Wyo.	15	3	18	20	14.5
Butte, Mont.	19.5	3	22.5	22.5	19
Helena, Mont.	19.5	3	22.5	24.5	19
Salt Lake City, Utah	16.5	3½	20	22	17
Boise, Ida.	19.5	4	23.5	25.5	19
Twin Falls, Ida.	19.5	4	23.5	25.5	19
Albuquerque, N. M.	17	5	22	25	17

S. O. CALIFORNIA*

Phoenix, Ariz.	19	4	23	27	21.5
Los Angeles, Cal.	13.5	3	16.5	20.5	15.5
Fresno, Cal.	14	3	17	21	16.5
San Francisco, Cal.	14	3	17	21	15.5
Reno, Nev.	18	4	22	26	19
Portland, Ore.	14.5	3	17.5	21.5	16.5
Seattle, Wash.	14.5	2	16.5	20.5	16.5
Spokane, Wash.	18.5	2	20.5	24.5	20.5
Tacoma, Wash.	14.5	2	16.5	20.5	16.5

*On Oct. 1, t.w. price at all points for spot sales, was advanced 1c. Very large portion of deliveries are under contract carrying above prices. New customers signing contracts and selling only one brand of gasoline, are given prices published in above table.

S. O. LOUISIANA

Little Rock, Ark.	1	5	21	22	11
Alexandria, La.	14	2	16	18	†14
Baton Rouge, La.	13	2	15	17	†12.5
Lake Charles, La.	14.5	2	16.5	18.5	†14
New Orleans, La.	*14.5	2	*16.5	*18.5	†14
Shreveport, La.	14.5	2	16.5	18.5	†13
Lafayette, La.	14	2	16	18	†13.5
Bristol, Tenn.	16	3	19	21	14
Chattanooga, Tenn.	15	3	18	20	15
Knoxville, Tenn.	15	3	18	20	15
Nashville, Tenn.	15	3	18	20	15
Memphis, Tenn.	14	3	17	19	14

*New Orleans gasoline prices include 1c parish tax in addition to 2c state tax, and kerosene prices include 1c state tax and 1c parish tax.

†Kerosene price in Louisiana includes 1c state tax

S. O. OHIO

	Gasoline			Oil
	Total			
	T.W.	Tax	T.W.	S.S.	T.W.
All Ohio points	14	3	17	19	14

MAGNOLIA PETROLEUM

Muskogee, Okla.	14	3	17	18	11
Oklahoma City	13	3	16	17	11
Tulsa, Okla.	13	3	16	17	11
Fort Smith, Ark.*	15	*3	18	20	12
Little Rock, Ark.	15	5	20	21	12
Texarkana, Ark.*	13	*3	16	20	12
Dallas, Tex.	11	3	14	18	11
Fort Worth, Tex.	12	3	15	18	11
Houston, Tex.	11	3	14	18	15
San Antonia, Tex.	12	3	15	18	10
El Paso, Tex.	14	3	17	20	16

*Within City of Texarkana and Fort Smith, the state tax on gasoline is 3c per gal. conforming with the Texas state tax. In these two districts outside of the city the 5c Arkansas tax applies.

V. M. & P. NAPHTHA

(Changes ordinarily occur coincident with gasoline price changes)

	Oleum Spirits	V.M.&P. Naphtha	Cleaner Naphtha
Chicago	14.7	16.2	18
Detroit	16.4	17.9	19.7
Kansas City	†14.9	†16.4	†18.2
Milwaukee	15.4	*18.9	*20.7
Minneapolis	*18.7	*20.2	*22
St. Louis	14.6	16.1	17.9
New York		19	....

Note: Above prices on Oleum Spirits and V. M. & P. Naphthas went into effect Jan. 3, 1928.

*Includes 2c state tax.

†Includes 1c city tax.

CANADA

(Per Imperial Gallon, which is 1.2 American Gallons)

ONTARIO

	Gasoline				Oil
	Total				
	T.W.	Tax	T.W.	S.S.	T.W.
Toronto	19.5	3	22.5	26	21
Ottawa	19.5	3	22.5	26	21
Cochrane	24.5	3	27.5	36	26
Ft. William	22.5	3	25.5	29	22.5

MANITOBA

Winnipeg	21.5	3	24.5	28	21.5

SASKATCHEWAN

Regina	25.5	0	25.5	30	25.5

ALBERTA

Edmonton	26.5	3	29.5	33	26.5
Calgary	22.5	3	25.5	29	22.5

BRITISH COLUMBIA

Vancouver	21	5	26	30	22

QUEBEC

Montreal	20.5	5	25.5	29	21
Quebec City	22.5	5	27.5	33	23
Three Rivers	22.5	5	27.5	31	23

NEW BRUNSWICK

St. John	22.5	3	25.5	30	22
Moncton	22.5	3	25.5	30	22

NOVA SCOTIA

Halifax	22.5	5	27.5	32	24
Sydney	22.5	5	27.5	32	24

PRINCE EDWARD ISLAND

Charlottetown	22.5	3	25.5	29	22

Note: In districts surrounding these points 1c additional is added to city price.

Lull in Demand and Weather Bring Unsettled Market

Staff Special
NEW YORK, April 14

A LULL in jobbing demand together with inclement weather which covered virtually the entire Atlantic seaboard this week placed eastern gasoline markets in somewhat of an unsettled state.

From the standpoint of the major companies, gasoline prices were generally unchanged all along the seaboard. In some sections further advances were recorded. Goods in the hands of resale agents purchased over the month at prices substantially under the current market loomed as a disturbing factor particularly in the New York market.

On the other hand, the attempts of several large jobbing companies to contract for May gasoline requirements at current prices as early as the middle of April, action which is unprecedented according to several of the trade, gave rise to the opinion expressed in many quarters that the May market would be appreciably higher.

The market for U. S. Motor gasoline in New York harbor opened April 9 with the majority of sellers asking 9.25 cents. One company quoting 9.50 cents asserted its price was more or less nominal; and in view of the fact that goods were freely available at 0.25-cent less, they had succeeded in obtaining few orders at its high price. A second company quoting 9.75 cents reported no sales.

Resale agents who had made large purchases over April at 8.50 cents indicated they would be satisfied with 0.25-cent profit. In view of most of the jobbing trade being covered for April at 8.75 cents, they reported it was not an easy task to get business now at this price.

On April 14 approximately 55 cars of U. S. Motor gasoline were being offered in the New York market at around 9 cents a gallon. Sellers reported few buyers for spot shipment at this price. Companies quoting 9.25 cents reported some of their regular customers, now occupying more or less the position of distress buyers, were paying them their prices.

California gasoline at New York harbor was 0.25-cent higher at the end of the week. All 9-cent goods had been eliminated. One large dealer in this grade reported the sale of 25 cars at 9.25 cents April 13, and also reported selling small lots to companies who are ordinarily sellers, at the same price. This same company received an offer from a jobber of 9.75 cents for 50 cars of California gasoline over May. The offer was turned down.

A majority of the trade in New York set April 20 to April 25 as the time when they will consider the subject of May gasoline with jobbers, although there have been continued attempts on the part of the latter to protect themselves for May. One or two of the major companies have indicated 9.50 cents and 9.75 cents as the prices at which they might consider selling for May but as yet they have not definitely asserted themselves.

Philadelphia and Baltimore markets were generally unchanged. One seller in the former market reported he still had on hand approximately 1,000,000 gallons of U. S. Motor gasoline which he would sell at 8.75 cents. Other companies in this district were asking 9.25 cents for U. S. Motor.

One seller of California gasoline at Philadelphia advanced his price to 9.25 cents early this week thereby widening the range for this commodity 0.25-cent. Another seller continued to accept orders for this grade at 9 cents.

Likewise at Baltimore, U. S. Motor gasoline was available in one direction at 0.25-cent under California goods, although two companies were asking the same price, 9.25 cents, for both U. S. Motor and California. Orders for U. S. Motor at 9 cents, the one seller at this price reported, had been exceptionally good, however, and his last week's offer of any part of 2,000,000 gallons had been narrowed down to well under 500,000 gallons this week.

New England markets were unsettled. Prices, where quoted, were said to be largely nominal. In the Boston district, one company refused to make any quotation. A second company quoted 11 cents for U. S. Motor gasoline, f.o.b. refinery, 12 cents delivered in Boston, but stated its entire output was under contract or going to its own stations. A third company quoted 10.50 cents, f.o.b. shipping point, 10.75 cents delivered in Boston.

One refiner in the Providence market quoted 11 cents f.o.b. refinery for U. S. Motor gasoline as against the 9.50-cent quotations of three other companies.

Demand from the jobbing trade for kerosene continued slow. Prices displayed an advancing tendency which, the trade reported, was due largely to higher prices in other markets.

Quotations for water white kerosene under 7 cents both at New York and Philadelphia were withdrawn this week. One large refiner in New York was in the market buying this week for shipment to his own bulk stations.

The spot market for furnace oil and gas oil was dull. Most interest in these commodities centered around contracts for the 1928-1929 season.

French Buyers Display Interest In June Gasoline

Staff Special
NEW YORK, April 14

EXPORT markets at the Gulf were devoid of any activity until the latter part of this week when French buyers again displayed considerable interest in June gasoline.

Standard Oil Co. of New Jersey's advance in cased prices for export gasoline and kerosene late last week supplied the momentum for higher bulk prices at the Gulf. A much tighter situation in the Mid-Continent was considered no small factor in determining the higher prices suppliers were indicating for gasoline and kerosene at the Gulf early in the week.

The commitments of two important exporters for the next two months were asserted to be large and their advances to 8.50 cents and 9.50 cents, respectively for U. S. Motor and 64-66, 375 end point gasoline were admittedly arbitrary. The fact that an increasing number of suppliers were quoting these prices for actual business in the market toward the end of the week served to bolster the market further. It might be said that prices showed a minimum advance of 0.25-cent over last week.

The first three days of this week, a majority of suppliers quoted 8.25 cents, 8.75 cents and 9 cents for U. S. Motor, 61-63, 390 end point and 64-66, 375 end point gasoline, respectively.

The French subsidiary of a leading refiner entered the market April 11 for approximately 64,000 barrels of U. S. Motor and 64-66, 375 end point gasoline for early June loading at the Gulf. Most suppliers quoted 8.25 cents and 9.25 cents, and the business was finally closed with the parent company meeting competition at 8.1875 cents and 9.125 cents.

The same buyer was inquiring April 14 for an additional 64,000 barrels of the same two grades for middle-of-June loading at the Gulf. As near as could be ascertained Saturday suppliers were quoting 8.25 to 8.50 cents for U. S. Motor and 9.25 to 9.50 cents for 64-66, 375 end point. The business is scheduled for closing April 16.

The sale of a cargo of U. S. Mo-

(*Continued on Page* 112)

Complete Seaboard Market

(Export markets for whole year given in OIL PRICE HANDBOOK. Each volume carries refinery, tank wagon, crude and export markets—complete for the years 1924-1925-1926-1927)

Eastern Domestic Market

(Prices for tank car lots, f.o.b. refinery or seaboard terminal, represent majority of quotations and sales.)

	Apr. 16	Apr. 9	Apr. 2
U.S. Motor gasoline, New York harbor	9.00 – 9.25	9.00 – 9.25	9.00
U.S. Motor gasoline, Philadelphia	8.75 – 9.25	8.75 – 9.25	8.75 – 9.00
U.S. Motor gasoline, Boston district	*10.25 –10.50	9.50 –10.00	9.50
U.S. Motor gasoline, Providence district	9.50	9.50	9.25 – 9.50
U.S. Motor gasoline, Baltimore	9.00 – 9.25	9.00 – 9.25	8.75 – 9.00
U.S. Motor gasoline, Norfolk	9.25	9.00 – 9.25	9.00
U.S. Motor gasoline, †Wilmington, N. C.	†9.00	†9.00	†9.00
U.S. Motor gasoline, Charleston	9.00	9.00	8.75
U.S. Motor gasoline, Savannah	8.75	8.50 – 8.75	8.50
U.S. Motor gasoline, Jacksonville	8.50 – 8.75	8.50 – 8.75	8.50
California U.S. Motor gasoline, New York Harbor	9.25	9.00 – 9.25	9.00
California U.S. Motor gasoline, Baltimore	9.25	9.25	9.00
California U.S. Motor gasoline, Philadelphia	9.00 – 9.25	9.00 – 9.25	9.00
Water white kerosene, New York Harbor	7.00	6.75 – 7.00	7.00
Water white kerosene, Philadelphia	7.00	6.75 – 7.00	6.75 – 7.00
Water white kerosene, Baltimore	*7.50	7.50	7.50
28-34 gas oil, New York harbor	4.50 – 4.75	4.50 – 4.75	4.50 – 4.75
28-34 gas oil, Boston district	4.50 – 4.75	4.50 – 4.75	4.50 – 4.75
38-42 furnace oil, New York harbor	5.50 – 5.75	5.50 – 5.75	5.50 – 5.75
36-40 furnace oil, Boston district	5.50 – 5.75	5.50 – 5.75	5.50 – 5.75
Grade C bunker oil, New York harbor	$1.35	$1.35	$1.35
Grade C bunker oil, Boston district	$1.35	$1.35	$1.35
Diesel oil, New York harbor	$2.00	$2.00	$2.00

Note: Above prices do not include inspection tax levied in some states.

MEDICINAL OILS

Russian 885-890 s.g., 325-330 vis.	$0.80 – 0.90	$0.80 – 0.90	$0.80 – 0.90
Russian 870-875 s.g., 150-155 vis.	$0.67 – 0.77	$0.67 – 0.77	$0.67 – 0.77
Russian 860-865 s.g., 80-85 vis.	$0.65 – 0.75	$0.65 – 0.75	$0.65 – 0.75

*Nominal. †Only one refiner quoting.

New York Export Market

(Gasoline and kerosene in cases in bulk. Lubricating oils are per gal. in bbls. Cylinder oils are Penna. products.)

	Apr. 16	Apr. 9	Apr. 2
U. S. Motor gasoline	25.15	25.15	24.90
43-45, 150 w.w. kerosene	18.15	18.15	17.90
42-44, 110 s.w. kerosene	17.15	17.15	16.90
CYLINDER OILS			
Bright stock, dark	32.50 –33.00	32.50 –33.00	33.00
600 D filtered	30.00 –31.00	30.00 –31.00	30.00 –31.00
600 Warren E filtered	23.50 –24.00	23.50 –25.00	23.50 –25.00
600 s.r. unfiltered	16.75 –17.00	16.75 –17.00	16.75 –17.00
650 s.r. unfiltered	18.25 –19.50	18.25 –19.50	18.25 –19.50
600 flash s.r.	20.00 –21.00	20.00 –21.00	20.00 –21.00
630 flash, s.r.	32.00 –33.00	32.00 –34.50	32.00 –34.50
RED ENGINE OILS (Vis. 100°)			
300 vis. No. 6½ color	20.00	20.00	20.00
250 vis. No. 6 color	19.00	19.00	19.00
200 vis. No. 6 color	18.50	18.50	18.50
PALE ENGINE OILS (Vis. 100°)			
230 vis. No. 3¾ color	24.00	24.00	24.00
180 vis. No. 3½ color	20.00	20.00	20.00
100 vis. No. 2½ color	15.75	15.75	15.75
MOTOR OILS (Vis. 100°)			
600 vis. No. 7 color	35.00	35.00	35.00
500 vis. No. 6½ color	33.00	33.00	33.00
400 vis. No. 7¼ color	31.00	31.00	31.00
300 vis. No. 6 color	30.00	30.00	30.00
200 vis. No. 3¼ color	24.00	24.00	24.00
MEDICINAL OILS			
875-885 s.g.	$0.80	$0.80	$0.80
865-870 s.g.	$0.70	$0.70	$0.70

WAXES (In cents per pound, f.a.s. carload lots)

WHITE CRUDE SCALE (In barrels)

	Apr. 16	Apr. 9	Apr. 2
122-124 A.m.p.	3.375– 3.50	3.15 – 3.25	3.25
124-126 A.m.p.	3.375– 3.50	3.15 – 3.25	3.25
FULLY REFINED (In burlap bags)			
123-125 A.m.p. Phila.	4.125– 4.25	4.00	4.00
125-127 A.m.p.	4.125– 4.25	4.00	4.00
128-130 A.m.p.	4.25 – 4.50	4.25	4.25
130-132 A.m.p.	4.50 – 4.75	4.25 – 4.50	4.25 – 4.50
133-135 A.m.p.	5.25 – 5.50	5.25 – 5.50	5.25 – 5.50
135-137 A.m.p.	5.75 – 6.00	5.625– 5.875	5.625– 5.875
YELLOW CRUDE SCALE			
124-126 A.m.p.	3.125– 3.25	2.875– 3.00	2.875– 3.00

*Prices nominal.

Gulf Export Market

(Prices are f. o. b. Gulf oil terminals in Texas and Louisiana, shipments of 20,000 bbls. and over unless otherwise noted, representing sellers' opinions, except those prices specified to the contrary.)

GASOLINE	Apr. 16	Apr. 9	Apr. 2
U. S. Motor	8.25	8.00	8.00
60-62, 400 e.p.	8.75	8.50	8.50
61-63, 390 e.p.	9.00	8.75	8.75
64-66, 375 e.p.	9.25	9.00	*9.00
U. S. Motor, cases (cargoes)	$1.75	$1.70	$1.70
64-66, cases (cargoes)	$1.85	$1.80	$1.80

*Sales only.
†Quotation to inquiries only.

KEROSENE			
44 water white	7.25	7.00	*6.75
41-43 prime white	6.25	6.00	*5.75
Water white, cases (cargoes)	$1.65	$1.60	$1.55 – 1.60
Prime white, cases (cargoes)	$1.55	$1.50	$1.45 – 1.50

*Sales only.

DOMESTIC GAS & BUNKER OILS			
26-32 translucent gas oil	3.75 – 4.00	3.75 – 4.00	3.75 – 4.00
Grade C bunker oil	$1.05 – 1.15	$1.05 – 1.15	$1.05 – 1.15
Grade C bunker oil, cargoes	$0.90 – 0.95	$0.90 – 0.95	$0.90 – 0.95

MEXICAN CRUDE AND BUNKER OILS (F.O.B. Steamer, Tampico)			
Heavy Panuco crude taxes to be paid	$1.05	$1.05	$1.05
Grade C bunker oil, for bunkering purposes, taxes paid	$1.20	$1.20	$1.20

SOUTH TEXAS LUBRICATING OILS (Viscosity at 100° F.; cold test 0)
(Tanker, f.o.b. Houston)

100 vis. No. 2 unfiltered pale	6.00	6.00	6.00
200 vis. No. 3 unfiltered pale	7.75 – 8.00	7.75 – 8.00	7.75 – 8.00
300 vis. No. 3 unfiltered pale	9.00 – 9.25	9.00 – 9.25	9.00 – 9.25
500 vis. No. 3½ unfiltered pale	11.00 –11.75	11.00 –11.75	11.00 –11.75
750 vis. No. 4 unfiltered pale	12.50 –13.00	12.50 –13.00	12.50 –13.00
1200 vis. No. 5 unfiltered pale	15.50 –16.00	15.50 –16.00	15.50 –16.00
200 vis. No. 5-6 red oil	7.00 – 7.50	7.00 – 7.25	7.00 – 7.25
300 vis. No. 5-6 red oil	8.00 – 8.375	8.00 – 8.375	8.00 – 8.375
500 vis. No. 5-6 red oil	9.50 –10.00	9.50 –10.00	9.50 –10.00
750 vis. No. 5-6 red oil	11.25 –11.50	11.25 –11.50	11.25 –11.50
1200 vis. No. 5-6 red oil	14.00 –14.50	14.00 –14.50	14.00 –14.50

Pacific Export Market

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)

	Apr. 16	Apr. 9	Apr. 2
Gasoline, U. S. Motor, 53-55 Gravity	7.00 – 7.50	6.75 – 7.25	6.50 – 6.75
Gasoline, U. S. Motor, blends and special cuts	7.50 – 8.50	7.50 – 8.50	7.50 – 8.50
Gas Oil, 30-34, per barrel	$1.05 –$1.10	$1.05 –$1.10	$1.05 –$1.10
Diesel Oil, 27 plus, per barrel	$0.95 –$1.05	$0.95 –$1.05	$0.95 –$1.05
Bunker oil, 14-18, per barrel	$0.80 –$1.00	$0.80 –$1.00	$0.80 –$1.00
Fuel oil, 14-18, per barrel	$0.75 –$1.00	$0.70 –$1.00	$0.67 –$1.00
Kerosene, 38-40 w.w., 125-150 flash, per gal.	4.50 – 5.00	4.50 – 5.00	4.50 – 5.00
Cased Goods			
Gasoline, U. S. Motor	$1.70 –$1.80	$1.70 –$1.80	$1.70 –$1.80
Kerosene, 38-40 w.w., 125-150 flash	$1.35 –$1.45	$1.35 –$1.45	$1.35 –$1.45

Crude Oil Prices, as Posted by Major

(Crude prices for years 1924-1925-1926-1927 in

EASTERN FIELDS

(Posted by Joseph Seep Purchasing Agency)

Penna. Grade Oil in New York Transit Lines (Alleghany, N. Y. District)	$2.80
Bradford District Oil in National Transit Lines (Bradford District)	2.80
Penna. Grade Oil in National Transit Lines (Other Pennsylvania)	2.65
Penna. Grade Oil in Southwest Penna. Pipe Lines (Other Pennsylvania)	2.65
Penna. Grade Oil in Eureka Pipe Lines (West Virginia)	2.60
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O. district)	2.35
Keister Grade in National Transit Lines (Butler Co)	1.10
Cabell Grade in Eureka Pipe Lines (West Virginia)	1.35
Corning Grade in Buckeye Pipe Lines (Ohio)	1.55
Corning, O. heavy grade	1.45
*Somerset Oil in Cumberland Pipe Lines (Kentucky)	1.45
Ragland Grade in Cumberland Pipe Lines (Kentucky)	.95

*Somerset oil run prior to Oct. 1922, takes price of 6 cents lower than above quotations.

(Posted by Stoll Oil Refining Co.)

Oil City, Ky., oil in Stoll lines	$1.50

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.

Wooster	$1.57	Plymouth	$1.23
Lima	1.55	West Kentucky	1.33
Waterloo	1.20	*Canadian Petro.	1.95
Indiana	1.32	*Oil Springs	2.02
Princeton	1.50	*Posted by Imperial Oil Ltd.	
Illinois	1.50		

OKLAHOMA, KANSAS and NORTH TEXAS

Prices of Prairie Oil & Gas Co.

(In Oklahoma, Kansas, North and East Central Texas)

Effective Feb. 21, 1928

28-28.9	$0.96	41-41.9	$1.43
29-29.9	1.01	42-42.9	1.46
30-30.9	1.06	43-43.9	1.49
31-31.9	1.11	44-44.9	1.52
32-32.9	1.16	45-45.9	1.55
33-33.9	1.19	46-46.9	1.58
34-34.9	1.22	47-47.9	1.61
35-35.9	1.25	48-48.9	1.64
36-36.9	1.28	49-49.9	1.67
37-37.9	1.31	50-50.9	1.70
38-38.9	1.34	51-51.9	1.73
39-39.9	1.37	52 and above	1.76
40-40.9	1.40		

Humble Oil & Refining Co. Prices

(Ranger, North Texas, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona crudes all in Texas.)

Effective Feb. 21, 1928

Below 25	$0.76	26-26.9	$0.86
25-25.9	0.81	27-27.9	0.91

Humble Prices (Cont'd)

28-28.9	$0.96	37-37.9	$1.31
29-29.9	1.01	38-38.9	1.34
30-30.9	1.06	39-39.9	1.37
31-31.9	1.11	40-40.9	1.40
32-32.9	1.16	41-41.9	1.43
33-33.9	1.19	42-42.9	1.46
34-34.9	1.22	43-43.9	1.49
35-35.9	1.25	44 and above	1.52
36-36.9	1.28		
Mirando, Tex			$1.00

Magnolia Petroleum Co.

(In Oklahoma, Kansas and North and East Central Texas)

Feb. 21, Magnolia posted in above fields and in Panola Co., same schedule as Prairie, except these grades, unchanged from Feb. 16:

Below 30	$0.75
30-30.9	0.90
31-31.9	1.05
Glasscock and Howard Counties	$0.60
Chalkfield (Howard Co.)	$0.80
Iatan district	$0.93
Corsicana heavy	$1.00

Carter Oil Co.

(Oklahoma and Kansas)

Feb. 21, same schedule as Prairie plus these grades:

24-24.9	$0.76	26-26.9	$0.86
25-25.9	0.81	27-27.9	0.91

PANHANDLE, TEXAS

Humble Oil & Refining Co.

Effective Feb. 21, 1928

Hutchinson and Carson Counties:

Below 31	$0.60	38-38.9	$0.88
31-31.9	0.65	39-39.9	0.91
32-32.9	0.70	40-40.9	0.94
33-33.9	0.73	41-41.9	0.97
34-34.9	0.76	42-42.9	1.00
35-35.9	0.79	43-43.9	1.03
36-36.9	0.82	44 and above	1.06
37-37.9	0.85		

Wheeler County:

Below 29	$0.60	37-37.9	$0.95
29-29.9	0.65	38-38.9	0.98
30-30.9	0.70	39-39.9	1.01
31-31.9	0.75	40-40.9	1.04
32-32.9	0.80	41-41.9	1.07
33-33.9	0.83	42-42.9	1.10
34-34.9	0.86	43-43.9	1.13
35-35.9	0.89	44 and above	1.16
36-36.9	0.92		

Gray County:

Below 27	$0.60	36-36.9	$1.02
27-27.9	0.65	37-37.9	1.05
28-28.9	0.70	38-38.9	1.08
29-29.9	0.75	39-39.9	1.11
30-30.9	0.80	40-40.9	1.14
31-31.9	0.85	41-41.9	1.17
32-32.9	0.90	42-42.9	1.20
33-33.9	0.93	43-43.9	1.23
34-34.9	0.96	44 and above	1.26
35-35.9	0.99		

WEST TEXAS

Humble Oil & Refining Co.

Effective Aug. 23, 1927

Crane, Upton, Crockett and Pecos Counties | $0.60

NORTH LOUISIANA—ARKANSAS FIELDS

Prices of Standard Oil Co. of Louisiana Caddo, Homer, Haynesville, Bull Bayou, El Dorado, Crichton and De Soto

Effective Feb. 21, 1928

Below 28	$0.91	40-40.9	$1.40
28-28.9	0 96	41-41.9	1.43
29-29.9	1.01	42-42.9	1.46
30-30.9	1.06	43-43.9	1.49
31-31.9	1.11	44-44.9	1.52
32-32.9	1.16	45-45.9	1.55
33-33.9	1.19	46-46.9	1.58
34-34.9	1.22	47-47.9	1.61
35-35.9	1.25	48-48.9	1.64
36-36.9	1.28	49-49.9	1.67
37-37.9	1.31	50-50.9	1.70
38-38.9	1.34	51-51.9	1.73
39-39.9	1.37	52 and above	1.76

Cotton Valley, below 36, $0.75. Rest of Cotton Valley schedule, beginning with 36-36.9 at $1.28, same as Caddo, Homer, etc.

Smackover, below 24	$0.75
do 24 and above	.90
Bellevue	1.25
*Urania, La	.75
†East El Dorado	1.00

*Posted by Louisiana Oil Refining Corp.

†Posted by Magnolia Petroleum Co.

Smackover prices posted on Feb. 7 by S. O. La., Gulf, Shreveport-El Dorado Pipe Line, Atlantic Oil Producing Co. and The Texas Co.; on Feb. 8 by Magnolia; on Feb. 6, by La. Oil Refg. Corp.

STEPHENS, ARKANSAS

Louisiana Oil Refining Corp.

Below 28	$0.85	30-30.9	$0.91
28-28.9	0.87	31-31.9	0.93
29-29.9	0.89	32 and above	0.95

GULF COASTAL

Posted by Humble Oil & Refining Co.

Effective March 14, 1927

Grades A	$1.20	29-29.9	$1.25
Grades B:		30-30.9	1.27
Below 25	1.15	31-31.9	1.29
25-25.9	1.17	32-32.9	1.31
26-26.9	1.19	33-33.9	1.33
27-27.9	1.21	34-34.9	1.35
28-28.9	1.23	35 and above	1.37

Fields classified as A and B are Spindletop, Goose Creek, Hull, Liberty, Sour Lake, West Columbia, Orange, Boling and Pierce Junction. All other fields are Grades A only.

(*Continued from Page* 110)

tor gasoline for coastwise shipment from the Gulf was reported April 12 at 8.25 cents. The ship is to be loaded early in May.

Kerosene prices advanced fully a 0.25-cent over last week. No company in position to supply a full cargo for reasonably prompt shipment could be found, according to a United Kingdom buyer. Up to April 12, water white and prime white kerosene were being freely quoted at 7 cents and 6 cents respectively by a majority of suppliers. A few were indicating they might advance their prices 0.25-cent.

The inquiry for a full cargo consisting of both grades revealed a scarcity of goods available for prompt loading and most suppliers advanced their prices to 7.25 cents and 6.25 cents, stating at the same time they would be able to take on only part cargo lots at these prices.

Heavy oils did not break away from the doldrums. Prices showed no material change. Demand continued relatively slow. Gas oil of 26-30 gravity was freely offered at 3.75 to 4 cents.

Cargoes of grade C bunker oil were quoted at $0.90 to $0.95 a barrel and bunkers were quoted 10 to 25 cents a barrel higher depending on point of origin.

New York Wax Market

(*Continued from Page* 108)

sellers were asking 4.125 to 4.25 cents, and in one instance, 4.50 cents for their goods. The higher melting points likewise were quoted higher.

Yellow crude scale was offered at 3.125 cents, minimum, with some sellers asking 3.25 cents a pound.

The New Orleans market was generally unchanged. White crude scale was offered at as low as 3.25 cents and sales as high as 3.375 cents were reported. Sales of semi-refined wax also were reported at the latter price. Fully refined were higher.

Crude Price Changes

SHREVEPORT, On April 11 Standard Oil Co. of Louisiana for the first time posted a gravity schedule on Cotton Valley crude in order to care for recently discovered light oil production in this field. Oil below 36 gravity is posted at the old price of 75 cents. Oil of 36 to 36.9 gravity is now $1.28, with 3 cent differential for each succeeding degree of gravity, up to 52 and above which is $1.76. This schedule conforms to other North Louisiana and to Mid-Continent fields.

The new prices were met immediately by the Louisiana Oil Refining Corp.

Purchasers, in All Fields (in Effect April 16)

OIL PRICE HANDBOOK published annually)

GULF COASTAL

Prices of The Texas Co.

Effective March 14, 1927

Grades A	$1.20	*Grades B	$1.15
‡Grades B (light crude):			
35-35.9	$1.37	38-38.9	$1.43
36-36.9	1.39	39-39.9	1.45
37-37.9	1.41	40 and above	1.47

*Grades B include all heavy crudes which do not meet tests for Grades A or for Gulf Coast light crude.

‡The Texas Co.'s gravity and price schedule on oil below 35° is same as Humble's postings on Grades B.

ROCKY MOUNTAIN FIELDS

Prices of Ohio Oil Co., and Midwest Refining Co.

(Salt Creek prices effective Feb. 21, 1928)

‡Salt Creek below 29	$0.96
" " 29-29.9	1.01
" " 30-30.9	1.06
" " 31-31.9	1.11
" " 32-32.9	1.16
" " 33-33.9	1.19
" " 34-34.9	1.22
" " 35-35.9	1.25
" " 36-36.9	1.28
" " 37 and above	1.31
Elk Basin	1.33
Grass Creek light	1.33
Big Muddy	$1.25
Lance Creek	1.33
Rock Creek	1.25
Mule Creek	1.10
Rex Lake	1.10
‡Osage	1.33
‡Cat Creek, Mont.	1.33
Sunburst, Mont.	1.50
‡Hogback, N. Mex.	1.38
Artesia, N. Mex.	1.00

‡Posted by Midwest Refining Co. Midwest also buys Grass Creek light and Elk Basin.

The Texas Co. buys Salt Creek and Big Muddy crude.

CALIFORNIA

Standard Oil Co. of California

Santa Maria and Ventura Posted by Union Oil Co.

Gravity	Signal Hill Seal Beach Huntington Beach	Inglewood Torrance	Whittier La Habra	Newhall, McKittrick, Kern River	Olinda-Brea Canon, Richfield	Athens-Rosecrans Dominguez	Montebello	Coyote Hills	Santa Fe Springs	Midway, Sunset Buena Vista & Elk Hills	Lost Hills	Coalinga	Wheeler Ridge	Santa Maria	Ventura
14-14.9	$ .85	$ .85	$ .85	$ .75	$ .85	....	$ .85	$ .85	....	$ .75	$ .75	$ .75	$ .75	$ .85	$ .85
15-15.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
16-16.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
17-17.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
18-18.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
19-19.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
20-20.9	.85	.85	.85	....	.85	....	.85	.85	....	.77	.77	.76	.76	.85	.85
21-21.9	.86	.86	.85	....	.86	....	.85	.86	.85	.79	.79	.77	.77	.85	.85
22-22.9	.87	.87	.85	....	.87	....	.85	.87	.85	.81	.81	.78	.78	.85	.85
23-23.9	.88	.88	....	....	.88	....	.85	.88	.85	.83	.83	.79	.79	.85	.85
24-24.9	.89	.89	....	....	.89	$ .89	.85	.89	.85	.85	.85	.80	.80	.85	.85
25-25.9	.90	.90	....	....	.90	.90	.86	.90	.86	.87	.87	.81	.81	.86	.86
26-26.9	.92	.92	....	....	.92	.92	.87	.91	.87	.89	.89	.83	.82	.87	.87
27-27.9	.94	.94	....	....	.94	.94	.88	.92	.88	.91	.91	.85	.83	.88	.88
28-28.9	.96	.96	....	....	.96	.96	.89	.93	.89	.93	.93	.87	....	.89	.89
29-29.9	.98	....	....	....	.98	.98	.90	.94	.91	.96	.96	.89	....	.91	.91
30-30.9	1.00	....	....	....	1.00	1.00	.91	.95	.93	.99	.99	.91	....	.93	.93
31-31.9	1.03	....	....	....	....	1.03	....	....	.95	1.02	1.02	.93	....	....	.95
32-32.9	1.06	....	....	....	....	1.06	....	....	.97	1.05	1.05	.95	....	....	.97
33-33.9	....	....	....	....	....	1.09	....	....	.99	1.08	1.08	.97	....	....	.99
34-34.9	....	....	....	....	....	1.12	....	....	1.01	....	1.11	.99	....	....	1.01
35-35.9	....	....	....	....	....	1.15	....	....	1.03	....	....	1.01	....	....	1.03
36-36.9	....	....	....	....	....	1.18	....	....	1.06	....	....	....	....	....	1.06
37-37.9	....	....	....	....	....	1.21	....	....	1.09	....	....	....	....	....	1.09
38-38.9	....	....	....	....	....	1.24	....	....	1.12	....	....	....	....	....	1.12
39-39.9	....	....	....	....	....	1.27	....	....	1.15	....	....	....	....	....	1.15
40-40.9	....	....	....	....	....	1.30	....	....	....	....	....	....	....	....	....
41-41.9	....	....	....	....	....	1.33	....	....	....	....	....	....	....	....	....
42-42.9	....	....	....	....	....	1.36	....	....	....	....	....	....	....	....	....

*Union Oil Co. also purchases Long Beach Crude and is maintaining the same gravity and price schedule in that field as the Standard maintains in Signal Hill and Huntington Beach fields. The Union also buys and pays the same prices as the Standard in the Rosecrans-Dominguez fields, on gravities ranging from 14 degrees to and including 24.9 degrees and in Santa Fe Springs, on gravities ranging from 20 to and including 23.9 degrees.

REFINERS' and COMPOUNDERS' SUPPLIES

Following are average market prices for materials used by refiners and compounders as effective the date shown.

Refiners' Supplies

	Apr. 16	Apr. 9
Soda Ash light 58% bags, cwt.	$1.32	$1.32
Silicate of Soda 60 deg. drums, cwt.	$1.65	$1.65
Silicate of Soda 40 deg. tank cars, cwt.	$0.60	$0.60
Silicate of Soda 40 deg. drums, cwt.	$0.70-0.75	$0.65-0.70
Sal Soda wks.	$0.90-1.10	$0.90-1.10
Caustic Soda 76% solid, cwt.	$2.90	$3.66
Sulfuric Acid 60 deg. tank cars, f.o.b. shipping point per ton	$11.00	$11.00
Oleum 20%, fuming sulfuric, tank cars, wks	$18.50	$18.50
Sulfur, flowers of, cwt.	$3.10-4.00	$3.10-4.00
Liquid Chlorine, tank cars, wks, lb.	3.50-5.00	3.50-5.00
Litharge, powdered, casks, cwt.	$8.50	$8.50

Compounders' Supplies

	Apr. 16	Apr. 9
Vegetable Oils		
Linseed carloads, spot, lb.	9.60	9.80
Tanks, spot	8.80	9.00
Soya Bean, Tanks, coast, lb.	*9.50	*9.50
Oleic Acid		
Distilled, tanks, lb.	8.25	8.25
Distilled, bbls, lb.	9.00	9.00
Saponified, tanks, lb.	8.75	8.75
Saponified, bbls, lb.	9.50	9.50
Lard Oils		
Prime Winter Strained, lb.	16.00	16.00
Extra Winter Strained, lb.	13.00	13.00
Extra, lb.	12.50	12.375
Extra No. 1, lb.	12.00	11.75
No. 1, lb.	11.75	11.25
No. 2, lb.	11.25	11.00
Tallow oil, lb.	11.50	11.25
Neatsfoot Oil		
Pure, bbls, lb.	15.75	15.75
Extra, bbls, lb.	12.25	12.00
No. 1, bbls, lb.	12.00	11.50
Cold Pressed, lb.	18.50	18.25
Fish Oils		
Menhaden Oil		
Light Pressed, gal.	60-61	60
Light Pressed, tank cars, N. Y., gal.	52	52
White, gal.	65-66	65-66
Yellow bleached, gal.	63-64	63-64
Whale, extra winter bleached, gal.	82	82
Naval Stores		
Steam distilled turpentine, N. Y., gal.	55	56
Steam distilled turpentine, Savannah, gal.	50	51
Gum turpentine, N. Y., gal.	59.50	59.50
Gum turpentine, f.o.b. cars Savannah, gal.	54.50	55.00
Wood Rosin F, N. Y., bbl.	$8.05	$8.05
Wood Rosin F, Savn'h, bbl.	$7.25	$7.25
Gum Rosin B, N. Y., bbl.	$8.15	$8.25
Gum Rosin B, f.o.b. cars Savannah, bbl.	$7.35	$7.55
Rosin oil, pure, gal.	50	55
Rosin oil, compounded, gal.	40	47
Pine Tar		
Kiln burnt, bbl.	*$13.00	*$13.00
Retort, bbl.	$16.00	$16.00
Alcohol		
Denatured, Formula 5, in bbls., per gal.	50-54	50-54

*Nominal.

Chicago Gasoline Demand Steady; Kerosene is Scarce

Staff Special

CHICAGO, April 14

GASOLINE and kerosene continued to be the center of interest in the Chicago resale market this week. A steady call for gasoline was experienced by practically all of the oil trade. Demand was not quite as heavy this week as last, most sellers reported.

Both refiners and marketers appeared to be in good shape and little 58-60 U. S. Motor gasoline was offered under the prevailing price level of 6.75 cents. U. S. Motor opened at 6.625 to 6.75 cents but moved mostly at 6.75 cents thereafter. A few sales were reported at 6.875 cents Friday and Saturday.

Higher gravity gasolines were in fairly good demand at generally unchanged prices. The 60-62, 437 e.p. grade sold all week at 6.75 to 6.875 cents. Occasional sales were reported at 7 cents. Gasoline of 60-62, 400 e.p. moved mostly at 7 cents all week. Sales were also reported at 6.875 and 7.125 cents. Most sales of 64-66, 375 e.p. gasoline were at 7.25 to 7.375 cents with some refiners quoting 7.50 cents.

The kerosene situation showed little change this week. The majority of refiners reported they were "sold up," or unwilling to sell goods to others than regular customers. Practically all sellers were asking 5 cents for 41-43 w.w. kerosene.

Both marketers and jobbers reported but little goods available even at 5 cents and in many cases refiners were selling direct to jobbers at the same price as to carload marketers. One jobber reported calling four refiners Friday before he was able to buy any kerosene.

The bulk of sales of 41-43 w.w. kerosene were at 4.875 to 5 cents Monday and Tuesday and at 5 cents flat the rest of the week. Only sellers behind on shipping instructions were moving kerosene Friday and Saturday at 4.875 cents.

Demand for distillate was light. Prices were fractionally lower. The 38-40 straw opened Monday at 3.125 to 3.25 cents and was at 3 to 3.25 cents thereafter. One refiner, who was quoting 3 cents, reported better movement this week than for some time.

Gas oil enjoyed a steady call throughout the week. Ordinary dark became harder to buy for resale at 2.50 cents. Several sellers advanced prices .125 cent. The spread between the ordinary and zero grades of gas oil has narrowed somewhat. Ordinary 32-36 dark gas oil moved at 2.625 cents flat Monday and Tuesday and at 2.625 to 2.75 cents thereafter. The 32-36 dark zero gas oil was unchanged at 2.75 to 2.875 cents and the straw zero goods continued to move mostly at 3 cents.

A few sellers reported increased demand for fuel oils during the final days of the week. Others said business was only fair. Prices on all grades were generally unchanged.

Sales of 28-30 fuel were reported all week at $1 to $1.075. Fuel oils of 24-26 and 22-26 gravity moved at $0.85 to $0.90. The 18-22 grade continued to bring $0.80 to $0.875. Quotations and sales on Smackover treated fuel were generally unchanged at $0.90 to $0.95.

Occasional periods of precipitation will occur next week in Standard of Indiana territory. Variable temperatures will prevail all week but mostly below the seasonal normal.

LOS ANGELES, April 14.—A. G. Wilkes, vice-president, and Paul Masoni, general manager of Italo-American Petroleum at San Francisco, spent a few days early in April, in Los Angeles.

PLATT'S
OILGRAM
Petroleum Markets-Every Day

HOW SURE ARE YOU?

If you were to place an order *today* for gasoline, or kerosene, or fuel oil, or lubricating oil—

How sure would you be that you were buying *at the right time* and *at the actual market?*

Did you hear of a tankwagon cut today in another territory, which might indicate a cut coming in yours? Or, did crude change today? Or, did some one put in a big buying order for export which will stiffen the gasoline market ¼ cent or so tomorrow?

A large part of your profits come from *daily accurate knowledge* of market prices and conditions.

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CLEVELAND—738 Penton Bldg.

Wax and Gasoline Prices Rise in Pennsylvania

CLEVELAND, April 14.—White crude scale and gasoline prices have stepped up further in the western Pennsylvania refinery markets. Several refiners have sold their output of 58-60 U. S. Motor gasoline over the remainder of April and others have withdrawn quotations because they say they will need in their own service stations all the gasoline they can produce from now until after the peak of the motoring season.

Light gasolines have not followed the upward swing of the heavier grades so closely but less of the lighter grades is being made.

Kerosene demand had been described as good. Prices are the same as a week ago but more refiners are quoting top figures of the existing price ranges.

Fuel oil is not plentiful but prices still cover large ranges. This is due largely to freight rate differentials and nearness of the refiner to consuming centers.

Bright stocks seem to be the most active of the lubricating oils. The season for these oils is at hand. Both exporters and domestic motor oil compounders are in the market for Pennsylvania bright stocks. The use of more viscous motor oils in the new automobiles seems to have increased demand for bright stocks at a faster rate than the increase in number of automobiles, refiners say.

Filtered cylinder stocks have lately been more active than any time in the last two years refiners of these oils report. Export inquiries for steam refined stocks have been in the field this week and the price tendency of the lighter, more viscous and higher fire and flash stocks, has been upward.

Many refiners are sold up on white crude scale wax. Offers of 3.30, 3.35 and 3.40 cents have been made but buyers in the field say they have had to pay 3.50 cents, New York, the last few days.

Venezuelan Crude Unchanged

NEW YORK, April 14.—No change was noted in the market for Venezuelan crude the past week. Spot cargoes of 17-21 gravity oil were again offered around $0.91 a barrel, f.o.b. deepwater, Lake Maracaibo region. Last paid tanker rate is 20 cents. Cost laid down north of Hatteras figuring around $1.10 a barrel. Approximately 5 cents higher could be done over a period.

Supply Company's Earnings Fall

PITTSBURGH, April 14.—Oil Well Supply Co. in 1927 netted $490,502 after all charges. Its 1926 net profit was $2,045,227.

OIL STOCKS AND FINANCES

National Petroleum News

Vacuum Oil to Pay 100% In Stock April 28

NEW YORK, April 14.—The 100 per cent stock dividend of Vacuum Oil Co. will be paid April 28 to stock of April 14 record. About 2,500,000 shares of new stock will be distributed and approximately 2,000,000 shares will be retained in the company's treasury for future financing and expansion.

Vacuum's balance sheet shows an unusual relation between the value of the company physically and the market value of its stock which is based on the company's earning capacity.

Total assets of Vacuum after reserves Dec. 31 amounted to $158,798,136. The stock at its closing price of 152¼ April 13 had a market value of $382,510,159.50. The market value was 2.4 times the value of the property, investments and current assets after deduction of the depreciation reserve.

Vacuum's cash assets Dec. 31 totaled $32,103,588, exceeding the net value of the fixed assets by almost $7,000,000.

The company is said to be planning expansion of its marketing facilities in the British Isles and Australia.

Union Tank Car Co.'s Profits Are Lower

CLEVELAND, April 14.—Union Tank Car Co., in whose cars are hauled most of the products of the Standard Oil companies, netted $2,822,409 after all charges, taxes and reserves last year. In 1926 it netted $3,032,271. Dec. 31 the company had $6,714,233 net working capital, compared with $5,970,796 at the end of 1926. Balance sheets of Dec. 31 compare:

ASSETS	1927	1926
Tank car equipment, less depreciation	$39,397,366	$38,049,102
Shops	.....	1,888,151
Unamortized debts	170,452	252,232
Office furniture	.....	37,909
Inventories	638,502	481,769
Accruals	67,467	.....
Accounts receivable	1,277,288	1,371,358
Securities	3,043,684	4,637,456
Cash	2,998,314	1,047,479
Total	$47,593,073	$47,765,456
LIABILITIES		
Common stock	$30,844,000	$30,734,000
Equipment certificates	11,700,000	13,000,000
Accounts payable	482,046	605,425
Reserves, including taxes and annuities	828,975	971,939
Surplus	3,738,052	2,454,092
Total	$47,593,073	$47,765,456

Financial Notes

Shreveport—El Dorado Pipe Line Co.—March gross revenue was $116,294, compared with $110,405 in March, 1927. Profit before reserves was $44,110 in March, compared with $42,966 in the previous March. In the first quarter profit after charges and taxes but before reserves was $40,103, compared with $142,593 in the first quarter of 1927.

Union Oil Co. of California—Net income after all charges and reserves in first quarter was approximately $2,500,000 compared with $2,600,000 in the first quarter of 1927.

American Republics Corp.—Injunction suit of William P. Lee and other stockholders to prevent sale of additional common stock at $51 a share has been dropped by mutual consent of litigants and without prejudice. The complainants have disposed of their holdings.

Shaffer Oil & Refining Increases Capital

CHICAGO, April 14.—Shaffer Oil & Refining Co. stockholders have approved an increase in authorized stock to 1,000,000 shares of no par common and 450,000 shares of no par preferred from 460,000 shares of no par common, 40,000 of $1 par class A common and 450,000 shares of $100 par preferred stock.

Giving effect to these changes and recent issuance of $10,000,000 notes and retirement of old funded obligations, outstanding capitalization will consist of $10,000,000 of 6 per cent convertible notes, due March 1, 1933; 50,000 shares no par $7 cumulative convertible preferred and 580,000 shares no par common stock. Former capital was $13,593,700 of 6 per cent notes and bonds, $14,000,000 of 7 per cent preferred, 40,000 shares class A common and 137,552 shares of common.

It is proposed to issue common stock in exchange for $9,000,000 of preferred stock, certain funded debt, open accounts and outstanding common stocks.

John J. O'Brien, president, in a letter to stockholders stated: "While outstanding preferred will carry no participation privilege, it will have right of conversion, at any time, into common stock on basis of two shares of present common for each share of such preferred stock."

Sinclair Seeks Mammoth Stock Adjustment

CLEVELAND, April 14.—Sinclair Consolidated Oil Corp. directors are seeking an adjustment of the corporation's investment in the Mammoth Oil Co., the company Harry F. Sinclair organized to operate Teapot Dome.

Sinclair Consolidated exchanged 250,000 shares of its common stock for 500,500 shares of Class A and 1500 shares of Class B Mammoth stock. This amount was approximately a quarter of the Mammoth stock. When the exchange was made, Oct. 6, 1922, Sinclair was selling at 37, giving the stock Mammoth received a market value of $9,250,000 at the time.

Sinclair Consolidated directors also are negotiating for $1,340,034 which is the uncollected cost of construction at the naval oil terminal at Portsmouth, N. H. This sum is included among the Sinclair Consolidated's current assets as of Dec. 31, 1927.

The adjustment is being sought with the transferrors of the Mammoth stock, auditors state in the corporation's annual report.

Teapot Dome lease which was the chief asset of the Mammoth was held invalid by the United States Supreme Court. The Portsmouth terminal construction was in exchange for the navy's oil. This exchange was held illegal also by the Supreme Court.

Southern's Stock Reducing Dividend is $15

CLEVELAND, April 14.—Stockholders of Southern Pipe Line Co. at a special meeting April 10 voted to reduce the capital stock from $5,000,000 to $1,000,000 and to reduce par value of shares from $50 each to $10 each. Directors meeting after the stockholders' meeting, voted to pay a special dividend of $15 a share from the capital stock reduction account.

Checks for the special dividend will be mailed with certificates for the new stock about June 15. Stockholders have been requested to mail their old certificates to the company's offices in Oil City, Pa.

Transactions in Oil Shares on New York Stock Exchange

1927 High	1927 Low	1928 High	1928 Low	Listed Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended April 14 Sales	First	High	Low	Last	Change
37⅞	27⅝	35¾	27⅛	(sh) 922.075	N.P.	Amerada Corp.	50cQ	Jan. 31, 28	30,900	34¾	35¾	34½	35⅛	+ ¾
82½	35⅛	76½	51¼	(sh) 209.180	N.P.	American Republics Corp.	.....	.....	55,600	80¾	85	72	80	— ¾
50¼	35	41¾	37½	$56.000.000	$ 25	Associated Oil.	50cQ	Mar. 31, 28	210	40¼	40⅜	37⅝	40⅜	+ ⅛
131⅜	104	117½	95¾	50.000.000	100	Atlantic Refining.	$1Q	Mar. 15, 28	48,400	122¼	125¾	118½	123¾	+ 2⅜
119	115½	118¼	116	20,000.000	100	do pfd.	$1.75Q	Feb. 1, 28	100	118¼	118¼	118¼	118¼	+ ¼
35½	20¾	26½	22⅛	28,725.675	25	Barndsdall Corp. A.	s62½cQ	Feb. 6, 28	29,100	23¼	23⅞	23⅛	23¼	+ ¼
32½	20½	25⅜	22	799,775	25	do B.	s62½cQ	Feb. 6, 28	1,200	22⅝	23⅞	22⅝	22⅝	+ ⅜
32⅞	20	26⅞	24	51.524.150	25	California Petroleum.	25cQ	Mar. 1, 28	2,300	27¾	28⅛	27⅜	28	+ ⅛
96¾	65	93¼	71¼	20,785.400	100	General Asphalt.	.....	.....	37,500	90	90½	85	87¾	+ 1¾
144⅞	107¼	140¼	114	6,792.200	100	do pfd.	$1.25Q	Mar. 1, 28	800	133	133	130	132	— 1
175¾	60⅛	167	127	25,000.000	100	Houston Oil.	.....	.....	19,600	159¾	161	150¼	153⅞	— 5⅜
32¾	17⅝	28½	21¾	(sh) 500.000	N.P.	Independent Oil & Gas.	25cQ	Jan. 30, 28	43,200	26¼	*28¼	26¼	28	+ 1½
12⅛	7⅜	14	9	$3,280.340	$10	Indian Refining.	.....	Dec. 15, 20	8,700	13	13⅜	12⅜	13¼	+ ¼
12	7¼	13⅜	8½	4,550.110	10	do ctfs.	.....	.....	3,400	12⅜	12½	11⅝	12⅛	— ¼
112	99	115	101	2.296.400	10	do pfd.	.....	Dec. 15, 21	200	109	109	108½	108½	— 7½
37¾	20½	35⅞	27⅜	(sh) 3,992.122	N.P.	Lago Oil & Transport.	75cQ	Feb. 1, 28	3,500	30⅞	32⅛	30⅞	31½	+ ½
18⅛	10	13¼	9⅜	(sh) 1,136.500	N.P.	Louisiana Oil Refining.	.....	.....	19,000	11¼	*13¼	11⅜	13¼	+ 2
97	85¼	91	80	$4,000.000	$100	do pfd.	$1⅝Q	Feb. 15, 28	380	89¾	90¼	87	89¾	— ¾
22¾	12	18⅛	12½	(sh) 330,000	N.P.	Maracaibo Oil.	.....	.....	1,300	16	17½	15½	17½	+ 1¾
58½	31	37½	33	(sh) 2,316,692	N.P.	Marland Oil Co.	.....	Mar, 31, 27	60,600	40½	41¾	40⅜	40⅝	+ ¼
320	200	360	255	$45,942.800	$100	Mexican Petroleum.	$3Q	Apr. 20, 28	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	12,000,000	100	do pfd.	$2Q	Apr. 20, 28	.....	.....	.....	.....	.....	.....
9¼	3	14⅛	4⅝	(sh) 945,939	N.P.	Mexican Seaboard.	.....	Nov. 15, 24	10,800	14⅝	20¼	14⅝	16¼	+ 2⅝
39⅜	25½	29½	25⅛	(sh) 1,357,461	N.P.	Mid-Continent Petroleum.	.....	Aug. 1, 27	13,300	28⅜	29⅜	28½	28¾	+ ⅜
105	97	107	103¼	$6,718.000	$100	do pfd.	$1.75Q	Mar. 1, 28	.....	.....	.....	.....	.....	.....
3¾	1⅝	5⅞	2⅝	24.298.850	10	Middle States.	.....	July 1, 23	203,400	3⅝	*5⅞	3½	4⅝	+ 1
2¾	1⅜	4	1½	5,501.370	10	do ctfs.	.....	.....	28,300	2½	*4	2⅜	3¼	+ ¾
1⅞	1	1⅝	1¼	(sh) 3,500.000	N.P.	Pacific Oil.	.....	.....	4,400	1¼	*1⅜	1¼	1⅜	+ ⅛
65⅞	40⅛	46⅜	38¼	$48,807.400	$ 50	Pan American P. & T.	.....	Oct. 20, 27	8,200	44½	46¼	44¼	45½	+ 1¼
66⅜	40¼	46¾	37¾	121,097.900	50	do B.	.....	Oct. 20, 27	45,200	45⅞	46½	45	46	+ ¾
37⅞	16¾	25	18¼	(sh) 400.000	N.P.	Pan American Western B.	.....	Jan. 30, 27	10,400	24	24⅞	22⅞	23¾	— ⅜
18⅞	8	16½	11½	(sh) 198,770	N.P.	Panhandle P. & R.	.....	.....	3,600	14¾	15⅜	14⅝	14¾	+ ½
83	54	81	70	$2,935,200	$100	do pfd.	.....	July 2, 23	1,300	80	80⅛	79½	80⅛	+ 3⅛
60¼	36¼	43½	35¼	(sh) 2,406,796	N.P.	Phillips Petroleum.	37½cQ	Apr. 2, 28	35,500	40¼	41⅜	40	40⅞	— ⅛
1⅜	½	2	½	$29,622.925	$ 25	Pierce Oil Corp.	.....	.....	41,700	⅝	*2	1⅝	1⅞	+ 1¼
24	13½	24¾	16¼	15,000.000	100	do pfd.	.....	Feb. 1, 22	600	17	*24¾	17	24½	+ 7¾
5½	2½	5⅝	3½	(sh) 2,500.000	N.P.	Pierce Petroleum.	.....	.....	20,800	4	*5⅝	3¾	5	+ 1
33¾	16¾	26	16	$37,450.850	$50	Producers & Refiners.	.....	Sept. 15, 23	4,600	22½	22⅝	21½	22¼	— ¼
50	36⅞	45	41	2,845,350	50	do pfd.	.....	May 1, 25	120	44½	44½	43	43⅛	— 1⅜
33½	25	27½	19	75,959.250	25	Pure Oil Co.	12½cQ	Mar. 1, 28	17,000	23¾	24½	23½	23⅞	+ ¾
115½	111¾	112	108	13,000.000	100	do 8% pfd.	$2Q	Apr. 1, 28	260	111	112	111	112	+ 1
28⅝	25⅜	41¾	24	$29,224,894	$25	Richfield Oil.	25cQ	Feb. 1, 28	110,800	39¾	*41¾	37¼	41⅜	+ 1⅛
54½	44¼	48¾	44⅜	(sh) 611,303	13.40	Royal Dutch, N. Y. shares.	$1.343	Jan. 28, 28	12,500	45⅜	47	45¼	45⅞	+ ⅜
47⅞	41⅜	44	40⅝	(sh) 77,590	£2	Shell Transport & T.	97c	Jan. 23, 28	.....	.....	.....	.....	.....	.....
31¾	24⅝	27½	23¼	(sh)10.000.000	N.P.	Shell Union Oil.	35cQ	Mar. 31, 28	16,600	26¾	*27½	26⅝	26⅝	— ½
26⅝	14¼	24¾	18⅛	$7,208.080	$ 10	Simms Petroleum.	.....	Apr. 1, 27	11,000	23	23⅞	22½	22½	— ½
22⅜	15	28½	17⅜	(sh) 4,501.915	N.P.	Sinclair Consolidated.	.....	May 31, 24	200,500	27	*28½	26⅜	27⅛	— ¼
104½	97	109⅜	102½	$16,604,600	$100	do pfd.	$2Q	Feb. 15, 28	400	109	*109⅜	109	109⅜	+ ⅜
37⅜	24⅛	30¼	25	27,396,590	25	Skelly Oil Co.	50cQ	Mar. 15, 28	36,900	30½	31½	30¼	31⅜	+ 1¼
60¾	50⅝	59⅜	53	(sh)13.016.434	N.P.	S. O. California.	62½cQ	Mar. 15, 28	35,300	58	*59⅜	57¾	59	+ 1⅝
41⅜	35⅛	41¾	37¾	$607,910.525	$ 25	S. O. New Jersey.	‡25cQ	Mar. 15, 28	48,100	40⅞	*41¾	40⅝	41⅝	+ ½
34⅛	29¾	31⅝	28¾	427,973.275	25	S. O. New York.	40cQ	Mar. 15, 28	24,900	30½	31¼	30¼	30⅞	+ ½
34⅞	30	42¾	31½	(sh) 1,206.073	N.P.	Sun Oil.	25cQ	Mar. 15, 28	8,200	41¾	42½	40⅛	41¾	+ ¼
101⅝	99	102	100	$5,000.000	$100	do pfd.	$1.50Q	Mar. 1, 28	.....	.....	.....	.....	.....	.....
6½	3⅛	3⅞	2½	(sh) 1,121.368	N.P.	Superior Oil Corp.	.....	Dec. 20, 20	9,900	2⅞	3½	2⅞	3⅜	+ ½
58	45	56¾	50	$180,480.550	$ 25	The Texas Corp.	75cQ	Apr. 2, 28	67,400	54⅞	*56¾	54½	56⅛	+ 1⅜
18⅞	12	17	12½	8.380.340	10	Texas Pacific Coal & Oil.	.....	Jan. 3, 28	5,800	13⅝	13¾	13⅜	13¾	+ ½
29⅛	19	24½	19⅜	(sh) 2,168,410	N.P.	Tide Water Oil Co.	20cQ	Mar. 31, 28	2,100	22½	*24½	22½	24¼	+ 1¾
90⅛	85	91	87	$20,705.200	$100	do 5½% pfd.	$1.25Q	Feb. 15, 28	900	90	*91	90	91	+ 2¼
19⅛	15¾	18⅝	14¾	(sh) 4,796,158	N.P.	Tide Water Associated.	.....	Aug. 1, 27	57,400	16	*18⅝	15⅞	18⅝	+ 2⅜
90¾	85	87¾	82⅛	$72,745,900	$100	do pfd.	$1.50Q	Apr. 2, 28	2,900	84	87	84	86½	+ 2½
10⅜	3¾	10⅜	7¼	(sh) 3,742,029	N.P.	Transcontinental Oil.	.....	.....	202,900	8⅛	9⅜	8	8½	+ ⅜
56½	39⅝	51	42¾	$40,791.225	$ 25	Union Oil of California.	50cQ	Feb. 10, 28	12,100	50⅞	51	50	51	0
127½	94	125	119⅛	30,844.000	100	Union Tank Car Co.	$1.25Q	Mar. 1, 28	400	120	120½	120	120	0
34½	24½	32⅞	26	(sh) 240.380	N.P.	Warner Quinlan.	50cQ	Apr. 1, 28	21,700	30	31⅝	30	31⅝	+ 1
27½	20	24¼	20⅛	(sh) 490.000	N.P.	White Eagle Oil & Refining.	25cQ	Apr. 20, 28	1,400	21¼	22	21¼	21¾	+ ¼

•New High †New Low ‡Also extras s-Stock Total Sales 1,705,570

Pittsburgh Stock Exchange

1927 High	1927 Low	1928 High	1928 Low	Par Value	Stocks	Transactions Week Ended April 13 Sales	First	High	Low	Last	Change
9⅞	6⅞	9½	7½	$ 10	Arkansas Nat. Gas.	1,985	8	8	7⅝	7⅝	— ⅜
98⅝	80⅞	97¾	90¾	100	Columbia Gas.	66	96	*97¾	96	97¾	+ 5¼
107⅞	100	108	108	100	do pfd.	.....	.....	.....	.....	.....	.....
15	7½	10	7	10	Devonian Oil.	150	7½	7½	7½	7½	0
....	....	14	9¾	10	Dixie Gas & Util.	3,220	11	*14	11	14	+ 3
.....	.....	93½	88	100	do pfd.	855	93	*93½	91½	93½	+ ¾
117½	115	116	115	100	Duquesne Light pfd	.....	.....	.....	.....	.....	.....
....	....	85	80½	100	Fayette County Gas.	.....	.....	.....	.....	.....	.....
12¼	6	21	12	N.P.	Houston Gulf Gas.	135	20	*21	20	21	+ 5
59¼	37¼	58	52½	$ 25	Lone Star Gas.	12,893	56½	*58	x57¾	50	— 6
3⅞	3	4	3¼	5	Pittsburgh Oil & Gas	140	3¼	3¼	3¼	3¼	0
8	5½	7¼	6⅝	10	Salt Creek Cons.	120	6⅝	6⅞	6⅝	6⅞	0
26½	17	20	16¾	10	Tidal Osage	.....	.....	.....	.....	.....	.....
43	33	33¼	33	N.P.	Waverly Oil Wks. A	.....	.....	.....	.....	.....	.....

Pittsburgh Curb Exchange

1927 High	1927 Low	1928 High	1928 Low	Par Value	Stocks	Transactions Week Ended April 13 Sales	First	High	Low	Last	Change
....	....	....	....	$ 5	Duquesne Oil.	.....	.....	.....	.....	.....	.....
95	88	....	....	25	Gulf Oil.	.....	.....	.....	.....	.....	.....
....	....	115	115	....	†Houston Gulf Gas pfd.	.....	.....	.....	.....	.....	.....
10¾	5½	7⅞	5½	25	Leonard Oil & Dev.	.....	.....	.....	.....	.....	.....
2.70	.30	1.00	.50	10	Omar Oil & Gas.	.....	.....	.....	.....	.....	.....
2¼	1¾	....	....	5	Pittsburgh Oil Dev.	.....	.....	.....	.....	.....	.....
31	19	21¼	16¾	5	Plymouth Oil.	2,970	18	20¼	18	20	+ 3
6	5	....	....	5	States Oil.	.....	.....	.....	.....	.....	.....
3⅜	1½	3⅝	2¼	1	Texon Oil & Land.	5,550	3¼	*3⅝	3¼	3⅜	+ ⅛
23¾	18	18	15	10	Tidal Osage Non-vgt.	.....	.....	.....	.....	.....	.....

•New High †New Low xEx Dividend.

Cleveland Stock Market

April 13	Par Value	Bid	Asked	Last Sale
Canfield Oil Co.	100	...	...	...
do pfd.	100	98¼	...	100
Fred G. Clark.	10	2¾	2¾	3
National Refining Co.	25	34	36¼	35
do pfd.	100	130	135	131
Paragon Refining Co.	25	12½	12¾	12½
do pfd.	100	123	...	124

Oil Dividends

	Amount	Payable	Stock of Record
Beacon Oil pfd. q.	$1.87½	May 15	May 1
Sinclair Cons. pfd. q.	$2	May 15	May 1
Tide Water pfd. q.	$1.25	May 15	Apr. 13
Union Oil Co. q.	50c	May 10	Apr. 18

Oil Company Earnings

	1927	1926
Associated Oil.	$3,527,958	$7,993,454
Sinclair Consolidated.	5,391,081	17,648,032
Lone Star Gas.	3,829,901	3,655,662
North Central Texas Oil.	192,025	.....
Indian Refining Co.	6,091	1,030,549
Tide Water-Associated.	5,345,872	*9,885,908
Tide Water Oil.	3,031,387	6,511,930
Tidal Osage Oil.	2,524,359	2,284,760

*Nine months.

Standard Oil Stocks on New York Curb

1927 High	1927 Low	1928 High	1928 Low	Outstanding Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Sales	Week Ended April 14 First	High	Low	Last	Change
21⅝	17⅞	22⅜	18¼	£ 4,126,460	£ 1	Anglo-American Oil	60⅓c	May 31, 27	2,000	20	20¾	19⅞	20	— ⅝
21½	17⅝	20½	18⅛	.....	£ 1	do cts. non-voting	.....	.....	100	20	19¾	19⅛	19⅛	+ 1⅛
3⅜	⅝	2⅜	1¼	(sh) 500,000	N.P.	Atlantic Lobos	.....	.....	1,800	2	2⅛	1⅞	2	+ ⅛
6½	2½	4⅞	3¼	$ 10,000,000	$ 50	do pfd	.....	.....	100	4½	4½	4½	4½	— ¼
69	50	56	49	1,000,000	25	Borne Scrymser	‡$1S.A.	Apr. 16, 28	350	49¾	51	†49	51	+ 1
60	45	74¾	58	10,000,000	50	Buckeye Pipe Line	$1Q	Mar. 15, 28	900	74	*74¾	73	74⅝	+ 1⅛
126	76½	149¾	117¼	3,000,000	25	Chesebrough Mfg	$1Q	Mar. 30, 28	500	136	143	134½	143	+ 3¼
22⅝	16¼	22½	16	36,057,840	10	Continental Oil	.....	Dec. 15, 27	8,000	17⅝	17⅞	17½	17¾	+ ⅛
137	89	105	88	3,000,000	100	Cumberland Pipe Line	$2Q	Mar. 15, 28	.....	.....	.....	.....	.....	.....
68½	47	72¾	64½	5,000,000	100	Eureka Pipe Line	$1Q	Feb. 1, 28	350	71	72½	71	71	0
13½	3½	11	5	16,000,000	100	Galena Signal Oil	.....	June 30, 25	1,800	9	*11	8	11	+ 4
59¾	23	39	27	4,000,000	100	do new pfd	.....	June 30, 26	10	37	37	37	37	+ 6
60½	35½	48	35	2,000,000	100	do old pfd	.....	June 30, 26	.....	.....	.....	.....	.....	.....
68½	54	68	60	73,117,577	25	Humble Oil & Refining	‡30cQ	Apr. 1, 28	18,800	64¼	66	64¼	65	+ ⅞
182	123¾	206	176½	20,000,000	100	Illinois Pipe Line	$6S.A.	Dec. 15, 27	1,000	200¼	200¼	195	196	— 4
64¾	37¾	65¼	56¾	(sh) 6,458,267	N.P.	Imperial of Canada	‡25cQ	Mar. 1, 28	1,800	60¾	61½	60½	61½	+ ⅜
94½	61	84⅝	74⅞	$5,000,000	$ 50	Indiana Pipe Line	†$1Q	Feb. 15, 28	.....	.....	.....	.....	.....	.....
39	28¼	43	35	(sh) 17,123,444	N.P	International Petroleum	25c	Mar. 15, 28	17,800	38¾	39¼	38⅛	39⅛	+ ⅝
24	13¼	32⅛	20½	$6,363,350	12.50	National Transit Co	25cQ	Mar. 15, 28	8,800	30½	30½	29	30	+ ⅛
44½	31¼	56	37½	5,000,000	100	New York Transit	.....	July 15, 26	150	55	55	55	55	+ ¾
100	70	125	94	4,000,000	100	Northern Pipe Line	‡$3S.A.	Jan. 1, 28	150	116	117	116	117	— 2½
67⅛	52	66¾	58	60,000,000	25	Ohio Oil Co	‡50cQ	Mar. 15, 28	3,800	60⅝	62¼	60⅝	62¼	+ ¾
39	12	83	29	10,000,000	25	Penn Mex. Fuel	.....	May 21, 25	77,500	48¼	*83	48⅞	78½	+31¼
190	132	223	184	81,000,000	100	Prairie Pipe Line	$2.50Q	Feb. 1, 28	1,400	217½	218	215¼	218	+ 2
55½	45⅝	50½	47⅝	60,000,000	25	Prairie Oil & Gas	.....	Aug. 31, 27	6,600	49⅞	50½	49⅝	50⅛	+ ½
201½	175½	178	167	4,000,000	100	Solar Refining	$5S.A.	Dec. 20, 27	.....	.....	.....	.....	.....	.....
27½	15½	33⅛	21	5,000,000	50	Southern Pipe Line	$2	Dec. 1, 27	800	31½	33	31⅓	33	+ 1
41½	35	52¾	36¾	20,00 000	25	South Penn Oil	50cQ	Mar. 31, 28	31,800	42	52¾	42	52¼	+10⅜
83	55½	96	70	3,500 000	100	South West Pa. Pipe Lines	‡$1Q	Apr. 2, 28	100	89	89	88	89	0
81½	64⅝	80½	70⅞	228,415,463	25	S. O. Indiana	‡62½cQ	Mar. 15, 28	21,200	76¾	78	76½	77⅝	+ ⅞
20⅞	14⅝	27¾	15	8,000.000	25	S. O. Kansas	.....	June 16, 24	25,000	21½	*27¾	21⅛	27¾	+ 6⅜
130	111½	135	122¼	17,012,559	25	S. O. Kentucky	$1Q	Mar. 31, 28	21,400	127¾	*135	127¼	135	+ 7⅝
49½	40	44¾	39⅜	4,559,850	25	S. O. Nebraska	63cQ	Mar. 20, 28	700	44½	*44¾	43	44¼	+ ¼
87½	72	79	71	14,000.000	25	S. O. Ohio	62½cQ	Apr 2, 28	550	76	77	75¼	75¾	+ ¾
122	117¼	122	117	7,000.000	100	do pfd	$1.75Q	Mar. 1, 28	.....	.....	.....	.....	.....	.....
21	14½	26	16	30,734,000	25	Swan Finch Co	.....	Nov. 1, 19	550	17	18	17	18	+ 1⅜
149⅞	95⅛	153¼	136¾	62,470,800	25	Vacuum Oil	‡50cQ	Mar. 20, 28	14,200	150	*153¼	149⅞	152¼	+ 4

*New high †New low xEx dividend ‡Also extras.

New York Bonds

Week Ending April 13

	High	Low	Last	Ch'ge
Assoc. Oil gold 6s	103¼	102¾	102¾	— ½
Atlantic Refg. deb. 5s	103	102¼	102½	0
Barnsdall Corp. 6s	102⅜	101⅛	102⅛	+ ⅝
Barnsdall Corp. 8s ex-war	92⅛	91	91⅛	— ⅛
Cal. Pet. 5s	100⅝	100½	100½	+ ¼
Cal. Pet. 5½s	102¾	102¼	102¼	— ½
General Asphalt 6s	112¼	110	111⅜	+ ¼
General Petroleum 5s	102¼	102	102¼	+ ¼
Humble Oil & Refg. 5½s	102¾	102	102⅜	+ ⅛
Humble Oil 5s	101⅜	100¾	101¼	— ⅛
Mid-Cont. Pet. 6½s	106¼	105½	105¾	+ ¼
Pan. Amer P & T 7s	105	105	105	0
Pan Amer. P & T 6s	103½	103	103⅜	— ⅛
Pan Amer. P & T 6s	97	96	96½	+ ¼
Pure Oil 5½s	100	99¼	99⅞	+ ⅛
Simms Pet. cvt. 6s	106½	105¾	106½	+1⅜
Sinclair Con. Oil 7s	104⅛	102¼	102½	—1¾
Sinclair Con. Oil 6½s	102¼	101⅛	101⅜	— ⅞
Sinclair Con. Oil 6s D	99⅜	99⅜	99⅜	— ⅛
Sinclair Crude Oil 5½s	99¼	99	99⅛	0
Sinclair Pipeline 5s	97¾	97	97⅛	— ⅝
Skelly Oil 5½s	95⅝	95⅛	95	— ¼
S. O. N. Y. 4½s	97¾	97¼	97½	— ¼
S. O. N. J. deb. 5s	103¾	103½	103½	0
Superior Oil 7s	103½	103½	103½	0
Union Oil of Calif. 6s A	111¼	100	111¼	+ ¼
Union Oil of Calif. 1st 5s	100¼	100¼	100¼	0
White Eagle 5½s	96½	96¼	96¼	— ¼

New York Curb Bonds

Week Ending April 13

	High	Low	Last	Ch'ge
Beacon Oil 6s '86	101	100	101	+ ½
Cities Serv. 5s '66	97¼	95¾	97¼	+ ⅝
Cities Serv. 6s '66	103½	103	103½	+ ⅝
Cities Serv. G 5½s '42	97⅛	96½	96½	— ½
Cont. Oil 5½s '37	98	97½	97½	0
Empire O. & R. 5½s '42	97½	97	97⅛	— ⅛
Galena Oil 7s '30	93	92½	92½	+ ½
Gulf Oil 5s '37	102	101¾	102	+ ¼
Gulf Oil 5s '47	102¾	101⅞	102¼	0
Indep. Oil 6s '39	101⅝	99	101⅝	+2⅝
Phillips Pet. 5½s '39	95	94½	94⅝	— ⅛
Richfield Oil 6s '41	116½	109	116	+1¾
S. O. N. Y. 6½s '33	103¼	103	103	— ¼
Sun Oil 5½s '39	102½	101⅞	102½	0
Trans. Con't. Oil 7s '30	107	104½	105½	+ ½
Warner Quinlan 6s '42	102	101	102	+ ½

Independent Oils on New York Curb

1927 High	1927 Low	1928 High	1928 Low	Par Value	Stocks	Transactions Sales	Week Ended April 14 First	High	Low	Last	Change
2⅛	.55	1½	.75	$ 5	Amer. Con. Oilfields	18,000	.83	.83	†.75	.80	0
7½	2¾	4⅞	3⅛	N.P.	Amer. Maracaibo	4,200	4	3⅞	3⅝	3¾	— ⅛
2¾	1	4	2¼	$ 10	Argo Oil	200	2⅛	2⅛	2⅛	2⅛	— ¼
9¾	6¾	9⅞	7¾	10	Arkansas Nat. Gas	.....	.....	.....	.....	.....	.....
20½	15½	....	....	N.P.	Beacon Oil	.....	.....	.....	.....	.....	.....
40	20½	39¾	32¾	N.P.	British American	200	36¼	37	36¼	37	— ¼
28¼	15½	23⅞	18½	25c	Carib Syndicate(new)	4,600	20¾	21	19⅛	19⅜	0
26	15⅜	....	....	....	do ctfs. of deposit	.....	.....	.....	.....	.....	.....
58¾	40¼	59¾	54	$ 20	Cities Service	39,000	56⅞	57¼	56⅝	57	0
95⅜	87	100	94½	100	do pfd	2,400	99½	100	99⅜	99½	0
8⅞	7⅜	9½	8⅞	10	do pfd. B	900	9¼	9½	9¼	9⅜	+ ¼
29¼	22½	28¼	28¼	10	do banker's shares	.....	.....	.....	.....	.....	.....
3⅞	1⅜	1⅜	1⅛	1	Colombia Syndicate	2,900	1½	1½	1⅜	1⅜	— ⅛
9¾	6¾	7⅝	6¾	10	Consolidated Royal	.....	.....	.....	.....	.....	.....
14⅞	9½	14⅜	10	N.P.	Creole Syndicate	.....	.....	.....	.....	.....	.....
3	.50	1½	.76	N.P.	Crown Central	2,200	90	100	90	100	+10
12	4	13⅞	8⅛	N.P.	Darby Petroleum	3,800	13⅞	14½	13⅛	14½	+ ⅞
11½	4	13½	7⅞	....	do trust ctfs	.....	.....	.....	.....	.....	.....
2¼	.74	1¼	1	N.P.	Derby Oil & Refining	.....	.....	.....	.....	.....	.....
16¾	4	7½	7½	N.P.	do pfd	100	7½	*7½	7½	7½	0
3¾	1	2	1¼	N.P.	Gibson Oil	6,700	1⅜	1½	1¼	1½	0
2	.40	.53	.15	N.P.	Gilliland ctfs	1,000	15	15	†15	15	—36
118	86¼	117¼	101⅛	$ 25	Gulf Oil Corp	6,800	115	116	113	115½	+ 1¾
2½	.80	2¾	1½	10	Intercontinent Pet	8,400	2⅛	2⅜	2	2¼	+ ¼
2¼	1¼	1⅞	1¼	N.P.	Kirby Petroleum	300	1¼	1¼	1¼	1¼	0
10⅞	5¼	7⅞	5¼	N.P.	Leonard Oil & Dev	4,200	7⅛	7¼	6½	6½	— ⅝
27½	20	26⅜	20	N.P.	Lion Oil & Refg	18,800	24⅞	*26⅜	24½	26½	+ 1½
59⅜	37	56	49	$ 25	Lone Star Gas	8,800	49	51	†49	50½	— 4⅞
2⅞	.80	1⅜	.91	1	Magdalena Synd	8,300	1	1¼	1	1¼	0
21½	20⅞	22⅛	22⅛	N.P.	Manhattan Oil	.....	.....	.....	.....	.....	.....
52	12	45	37⅝	N.P.	Margay Oil	400	40¼	40¼	40	40¼	+ 2⅝
3	1½	....	....	$ 10	Mexican-Panuco	.....	.....	.....	.....	.....	.....
12⅛	5	8	4½	N.P.	Mexico-Ohio Oil	1,800	5½	6	5	5½	— ½
1½	1	1½	.92	$ 1	Mountain & Gulf	3,800	94	94	†92	94	0
29¼	22¾	28⅜	24	10	Mountain Producers	8,800	24½	24⅞	24¼	24¼	— ⅜
5⅞	4⅜	5⅝	4¾	5	New Bradford	800	4⅞	5	4⅞	5	0
6¼	4	5½	4	10	New England Fuel	1,800	4½	*5½	4½	5½	+ 1¾
16	9¼	11	8⅛	1	New Mex. & Ariz	5,900	8¾	*11	8¾	11	+ 2⅜
13⅞	9	14¾	11½	25	New York Oil	100	14¾	*14¾	14¾	14¾	+ ½
12¾	9½	12⅜	10¾	N.P.	North Cent. Texas	800	12	12	12	12	0
23⅞	21¼	....	....	....	Okla. Nat. Gas ctfs.	.....	.....	.....	.....	.....	.....
9⅜	3¼	6	2⅜	N.P.	Pandem	21,300	3⅝	4	3½	3¾	+ ¼
12⅛	7	15	8½	N.P.	Panapec Oil	228,800	10¼	*15	10¼	14½	+ 4¼
9	7⅝	11⅜	10⅝	$ 25	Paragon Refg	.....	.....	.....	.....	.....	.....
.37	.25	9	4	N.P.	Peer Oil Corp	.....	.....	.....	.....	.....	.....
13½	5⅛	7¾	5⅛	$ 10	Pennok Oil	1,500	6	*7¾	6	6¾	+ 1¼
....	....	4⅜	3⅜	5	Pittsburgh Oil & Gas	.....	.....	.....	.....	.....	.....
24⅛	7	14	9	25	Red Bank Oil	200	10⅛	10⅛	10	10	— ⅛
15½	3½	6¾	4⅛	N.P.	Reiter-Foster	45,800	9	10¼	8½	8½	0
28¾	15	31½	22	$ 25	Richfield Oil pfd	2,800	23	23¼	†22	23¼	— 5¾
7	4½	5⅞	4⅝	N.P.	Ryan Consolidated	2,806	5	*5⅞	5	5⅜	+ ½
8	5¼	7¼	6½	$ 10	Salt Creek Cons	300	6¾	6¾	6½	6½	0
35½	27¼	35	28½	10	Salt Creek Prod	7,200	30⅜	30¾	30⅛	30¾	+ ¼
7	1¾	2	1	5	Savoy Oil	.....	.....	.....	.....	.....	.....
26½	17	21	13	10	Tidal Osage	3,400	20¾	*21	20⅛	20¾	0
23¾	15	19¾	13⅛	10	do non-voting	7,300	18½	*19¾	18	19½	+ 1
92	63½	87	82½	100	Transcontinental pfd	400	86¾	87	83	83	+ 2
23¼	7	38	18	10	Venezuela-Mexico	700	34	*38	34	38	+ 4⅞
7⅜	4¼	6¼	4⅞	5	Venezuelan Petrol	4,600	5⅝	5⅝	5¼	5¼	— ⅜
32⅜	19½	22⅞	18⅞	N.P.	Wilcox Oil & Gas	500	19	19¼	19	19¼	+ ⅛
8	4⅜	8⅛	5¾	$ 1	Woodley Petroleum	1,600	7⅞	*8¼	7⅞	7⅞	— ⅛
6	1¾	5	2⅛	25	Y Oil & Gas (new)	2,100	4⅝	*5	4	4½	— ⅜

*New High †New Low xEx Dividend

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Tax Protest Brings Pledge Ohio Official Will Fight Increase

Staff Special

CLEVELAND, April 14

WHEN Superior Oil Co., subsidiary of the Columbia Refining Co., Cleveland paid its gasoline tax to the state treasurer under protest a few weeks ago, it set in motion a political undercurrent that may keep Ohio from having a higher gasoline tax in 1929.

Bert B. Buckley, state treasurer, whose duty it is to collect the 3-cent a-gallon motor fuel tax from Ohio refiners and marketers, has already pledged himself against an increase in the tax. There are indications that other politicians will follow his lead.

When the Superior company which has bulk and service stations in northern Ohio between Cleveland and Toledo, paid its taxes, this paragraph was incorporated:

"This amount (the February tax) the Superior Oil Co. pays under protest and in the paying thereof does not admit or recognize the validity of the law imposing the tax and reserves all rights which it may or might have to the recovery of the said tax in the event that the law should be declared to be unconstitutional or void on any ground."

Mr. Buckley immediately wrote Burt Zimmerman, general manager of the Columbia and Superior companies, saying that voiding of the tax would imperil Ohio road building program which is dependent mainly on gasoline tax money. He pointed out that the Ohio law was greatly different from the Illinois tax statute which had been held illegal only a few weeks before and said Ohio under its constitution could not issue bonds for road building like Illinois. He also said Ohio is receiving $500,000 a year in gasoline taxes from motor tourists a sum that would be lost to this state were the tax nullified.

He also used an argument used by many state tax officials, an argument that gasoline marketers describe as "sour." It is that the oil companies have the use of the state tax money for approximately 30 days because they are not required to pay the taxes to the state until about the end of the month following the month in which the taxes are collected.

The Superior's protest which was accompanied by a similar protest from the Columbia, raised hopes among Ohio motorists that a nullification suit would be filed but no action has so far been taken because the Supreme Court of the United States has before it the suit of the Panhandle Oil Co. in which the Mississippi gasoline tax is being contested. Action of the Supreme Court in this case is being awaited by Superior's counsel, Sander's, Monahen & Sanders, Cleveland.

State Treasurer Buckley wrote the Mahoning Valley Petroleum Club of Youngstown that receipts from Ohio tax, which will amount to about $25,000,000 this year, are ample for all road purposes if the money is judiciously spent. He even held out hope that the tax may be reduced in the future. He concluded his letter with this pledge:

"Should a 5-cent gasoline tax or any figure above 3 cents in the gasoline tax be proposed in Ohio, the treasurer of state, charged with the collection of such tax and possessing the confidence of motor car owners of the state, will oppose any such proposed increase to the bitter end."

The Supreme court recently upheld the Connecticut law which taxes motor busses in interstate transportation 1 cent a mile. Many oil men in the last few years have advocated that some means other than a gasoline tax should be used to raise road building and maintenance funds.

Will Aid Jobbers In Grease Problems

CLEVELAND, April 13.—The Stevens Grease & Oil Co. has C. H. Schuch as lubricating engineer. Mr. Schuch, formerly sales manager of the American Oil Corp., Jackson, Mich., has been active in the manufacture and sale of grease since 1913.

Sales service in industrial and automotive grease lubrication will be extended to jobbers under Mr. Schuch's supervision, a department to assist the jobber with his industrial grease and cutting oil problems will be maintained.

LOS ANGELES, April 14.—Up to the week ended March 31, a total of 260 new wells had been started since first of the year in California, against a total of 408 for same period in 1927, showing a decrease of 148.

LOS ANGELES, April 14.—The Gilmore Oil Co.'s natural gasoline plant at Long Beach is being increased from 15,000 to 30,000 gallons daily production, with all new equipment being manufactured and installed by J. A. Campbell.

Car Company Nets More

CHICAGO, April 14.—General American Tank Car Corp. netted $2,921,046, compared with $2,265,013 in 1926. The company owns, controls and operates more than 28,000 cars, President Max Epstein wrote stockholders. The company is establishing repair plants at several strategically situated railroad centers.

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